

PHOTOLOGY DEPT.

modern packaging

NOVEMBER

1943

NOV 6 - 1943

DETROIT





Seven lives saved by a four-pound can

"We had been looking for those men for many days—hour after hour, frantically searching—praying we would find them.

"Each succeeding day seemed more hopeless than the day before. Time was running out, *their time to live!* We had to find them soon!

"Suddenly we caught sight of a column of smoke curling upwards as though coming right out of the water! In a few minutes we *did* see them, huddled in their tiny raft, a mere speck bobbing up and down on the waves.

"We never would have found them if it hadn't been for that smoke signal!" (1)

★ ★ ★

Such accounts of rescued men are an inspiration to us at American Can Com-

(1) This is a typical, not an actual, report.

pany. We are thankful that we are able to turn out the containers for daytime distress signals, with which life boats and rafts are equipped.

These distress signals require metal, as do blood-plasma containers and first-aid kits, also made at American Can. Metal is used, too, for containers for emergency field rations, and for cans to safeguard the fuel for life-raft stills that convert salt water into fresh water.

These products save American lives. We are thankful to be able to make them.

Other products coming off production lines of the American Can are complete torpedoes . . . artillery shell containers . . . TNT containers . . . demolition kits . . . land mines . . . hand grenades . . . and

many others. It is our hope that each one of them will help to shorten the war.

As always, however, we are still very much in the business of making cans for food. Last year *more* food was packed in cans than ever before, a great percentage going to the army and navy.

For many civilian items, substitute containers must now be used in place of the customary can. We are making every effort at American Can to develop wartime containers suitable for every type of product.

CONTRIBUTE YOUR BLOOD TO THE RED CROSS

As you read this advertisement—stop and think—your blood could save the life of a wounded American soldier! If you live in or near one of the 33 cities in which Red Cross blood-donor centers are located, call and make an appointment.

AMERICAN CAN COMPANY
230 PARK AVENUE • NEW YORK 17, N. Y.



IF YOU COULD WRITE the exact manufacturing specifications of the cap with which you seal your packages, you would insist on certain basic qualities.

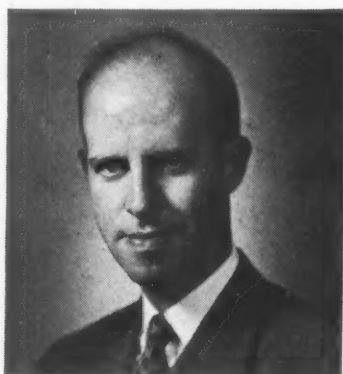
First, it would be simple in construction, made to precise standards, and of uniform fit and appearance. *Next*, it would be adaptable to sealing most of your various products, dependable under usual packing and shipping conditions, and convenient for the consumer to remove and reapply. *Then*, it would be decorative in design and color, but not "arty." *Last*, it would be economical for the purpose used—product, package and market considered. *And that* describes the closure known as Phoenix C T Cap. Phoenix Metal Cap Co., 2444 West Sixteenth St., Chicago, Ill.; 3720 Fourteenth St., Brooklyn, N. Y.



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 FLORENCE GETTER, *Editorial Assistant*

MODERN PACKAGING

NEW EDITOR



With this issue Lloyd Stouffer comes to MODERN PACKAGING as executive editor from *The Detroit Free Press*, where he was for nine years a news executive. A native of Decatur, Ill., and a graduate of James Millikin University, he has a background of 17 years' newspaper work in Louisville, Toledo and Detroit. He has written many articles for technical and business publications and has been a frequent contributor to MODERN PLASTICS and MODERN PACKAGING. Mr. Stouffer's appointment will give Editor Browne more time to maintain the magazine's outside contacts and to keep in close touch with today's changing developments in the field.

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VOLUME 17

NOVEMBER 1943

NUMBER 3

General

Postwar Horizons.....	51
Conversion Time: 30 Minutes.....	58
Future Package Design Will Be No Guesswork.....	62
Plastic Bottles?.....	65
Design Histories.....	68
Tools for Marking Overseas Shipments.....	70
Hands Off.....	74
Packaging Pageant.....	76
How a Design Is Born.....	78
Display Gallery.....	80
Progress in Roll-Type Labels.....	82
Five Gallons of Liquid in Corrugated Board.....	86
Strange Cargo.....	88
Re-use Campaign Ties in with L-317.....	106

Technical

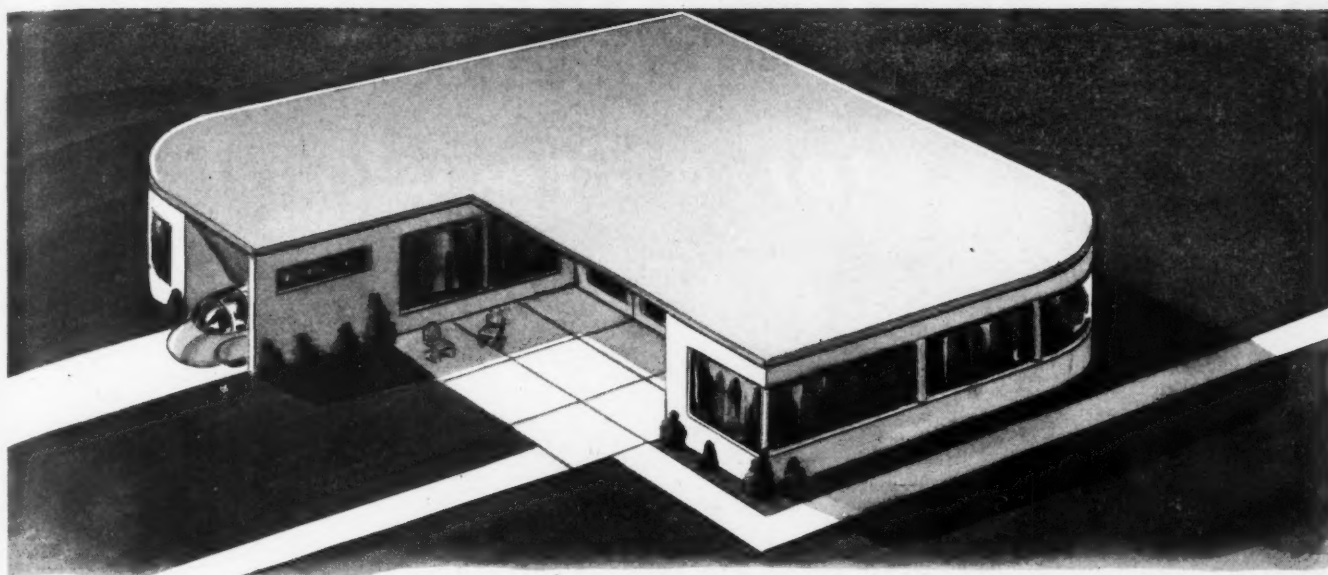
Electronics at Work on Quality Control.....	91
TAPPI—Army-Navy Requirements Conference.....	96
Questions and Answers.....	104

Departments

Washington Review.....	108
U. S. Patent Digest.....	112
Equipment and Materials.....	114
Plants and People.....	116
For Your Information.....	118

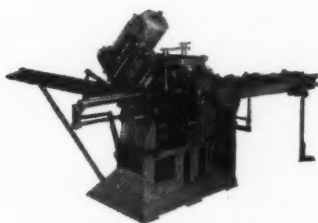
COVER—Color photo, courtesy U. S. Army Signal Corps.

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COMING . . . A BETTER WORLD . . . AFTER VICTORY

...IN HOME LIVING...



Wrapping machine for blasting powder

Packaging, too, is "on the edge of a new world." Already packaging "mock-ups of the future" . . . new shapes, sizes, materials . . . are waiting for the Victory signal to "Go!"

But these new packages must be mass-produced to assure low cost per unit . . . When the time is ripe, Redington, ever a pioneer in packaging methods . . . will be ready.

Until then . . . and Victory . . . Redington will continue to turn out machine tools of war, and packaging machines on high priorities.

In the words of Donald Nelson, "we are standing on the edge of a new world." For example, four and one-half million new homes will be built immediately following Victory, according to predictions of the U. S. Department of Commerce. Homes something like the one visualized here—with controlled light, sound and heat—larger window areas—greater flexibility in the interior—and at a lower cost. The architecture will be simplified—new effects introduced.

Outstanding feature of Homes of Tomorrow will be air conditioning . . . inexpensive units that will enable people to work and sleep in air conditioned rooms—to have fewer colds, enjoy more energy and greater comfort. "Mock-ups of The Future," one magazine writer calls models of such developments now in the laboratory stage. And just as Henry Ford brought the car down from \$950 in 1909-10 to only \$360 in 1916-17, so the newer homes will be cheaper in cost, through mass production and use of new materials.

F. B. REDINGTON CO., (Est. 1897) 110-112 So. Sangamon St., Chicago, Ill.

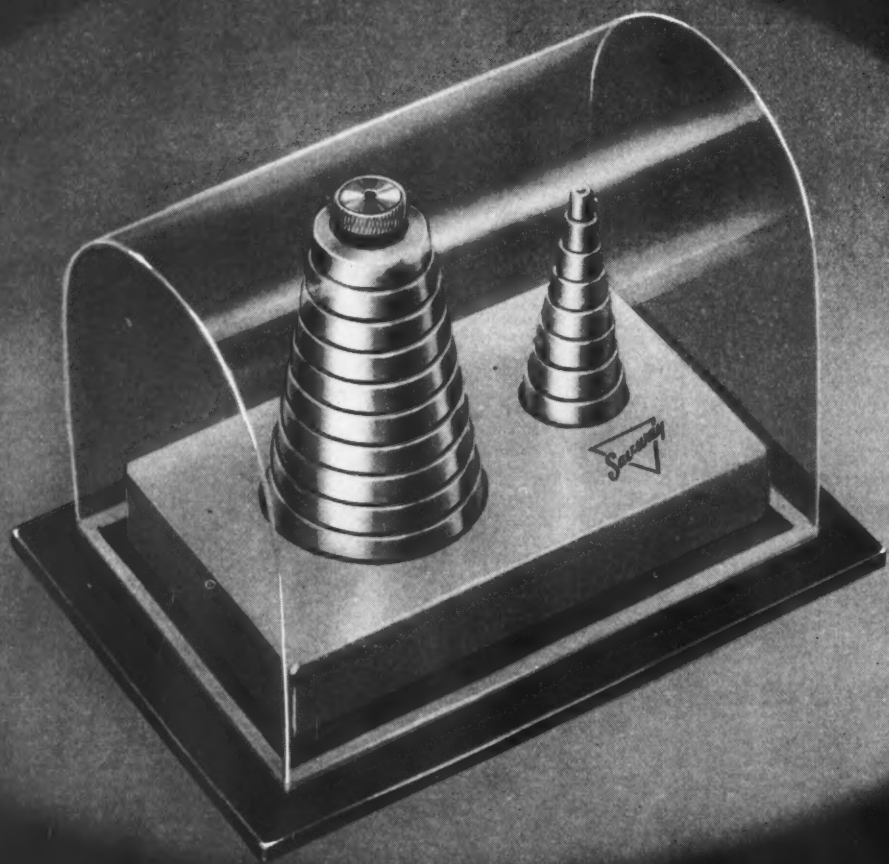
REDINGTON

PACKAGING MACHINES

FOR CARTONING • WRAPPING • SPECIAL PACKAGING

MODERN PACKAGING

for a Precision Tool...



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that Provides a MODERN Method of Checking Micrometers and Other Precision Inspection Devices

Sav-Way's new set of Master Setting and Checking Rolls is housed as befits a precision tool of this calibre, in a modern transparent plastic case.

Precision tools and inspection devices are only as accurate as the methods and gages by which they are set and checked. When

anvils are worn unevenly, flat gage blocks cannot give accurate readings. Sav-Way Master Setting and Checking Rolls provide for the first time a really accurate means of checking micrometers, snap-gages, amplifiers, dial indicators, and other inspection devices, under all conditions of wear.

SAV-WAY MASTER SETTING AND CHECKING ROLLS



The set consists of 20 rolls ranging from .100" to 2.000" in diameter. Rolls are hardened, ground, and lapped to X gage tolerance. They are deep frozen before finish grinding to eliminate internal strains and provide accelerated ageing.

Send for Illustrated Literature

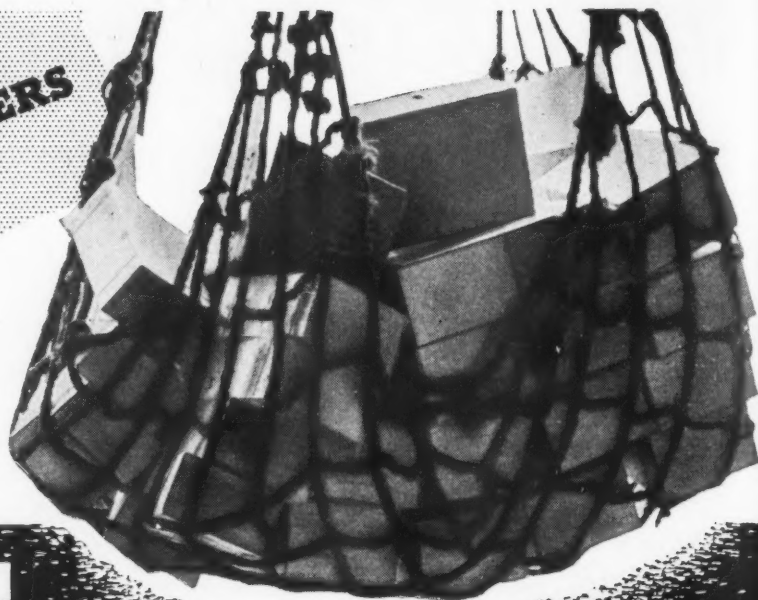
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★ Products Division ★

4875 EAST 8-MILE ROAD • BOX 117, HARPER STATION
DETROIT 13 • MICHIGAN

PRODUCERS OF SAV-WAY HAND AND HYDRAULIC GRINDERS • SAV-WAY GOLD SEAL SPINDLES
PLUG GAGES • PRECISION AIRCRAFT AND AUTOMOTIVE PARTS

SEAL
WATERPROOF CONTAINERS
with



SOLSEAL

WATERPROOF TAPE

for **OVERSEAS SHIPMENTS**

OF INTEREST TO EVERY EXPORT SHIPPER is this newly perfected water-resistant tape. Its objective—to seal the new waterproof or moisture-resistant containers intended to carry materials for overseas shipments.

SOLSEAL Tape is available in 30/30/30 and 60/30/30. Also available string-filled.

Multiple tests have proven that the tape adheres to the container *for over eight weeks after immersion!* Under conditions of high humidity, rain and actual immersion this tape answers a real need. Write for *free sample coil* with solvent for testing purposes. Specify type of SOLSEAL sample desired.

SOLSEAL Tape may be obtained from the following companies:

Atlantic Gummed Paper Corp., Brooklyn, N. Y.

The Brown-Bridge Mills, Inc., Troy, Ohio

Central Paper Company, Menasha, Wis.

Edgewater Paper Company, Menasha, Wis.

McLaurin-Jones Co., Brookfield, Mass.

Mid-States Gummed Paper Co., Chicago, Ill.

Nashua Gummed & Coated Paper Co., Nashua, N. H.

Rexford Paper Co., Milwaukee, Wis.

The Gummed Products Co., Troy, O.

Thomas Stationery Mfg. Co., Springfield, Ohio

M c L A U R I N - J O N E S C O .

BROOKFIELD, MASS. • OFFICES: NEW YORK • CHICAGO • LOS ANGELES

Official U. S. Marine Corps Photo





Maximum protection is obtained when heat sealed aluminum foil is immediately next to the product as a carton liner.

IDEA!

...for cereal products

**and how to protect them (postwar)
against air and moisture vapor**

**Aluminum
IS A NATURAL
PROTECTOR**

Alone, or in combination with other materials, it excels in preserving freshness, flavor, volume, aroma and color of products that are sensitive to air, light, radiant heat and gain or loss of moisture. Its sparkling beauty makes a handsome package, too.

New techniques and materials for heat-sealing aluminum foil will give you a 100% airtight, moistureproof and siftproof liner. Actually, a "can" within a carton.

We suggest that the foil be *inside* rather than *outside* the carton for this sound reason: When the moisture barrier is next to the product, moisture content can't escape through aluminum foil into the carton walls. Atmospheric moisture is repelled just as effectively as it would be with foil on the outside.

You are probably wondering about cost. Frankly, we are, too. Aluminum foil will never be as cheap as paper, that much we know. Still we have a notion that foil prices will be of more than passing interest to you after the war.

Meantime, while that important detail is working itself out, mightn't it be worth-while to look at other details closer... with us? ALUMINUM COMPANY OF AMERICA, 2129 Gulf Building, Pittsburgh, Pennsylvania.



Think of

ALCOA ALUMINUM

when you think of tomorrow's packages



Paper takes a waste measure

DAY BY DAY the need for wood pulp mounts.

Long ago the paper and pulp industry took on far greater responsibilities than the routine office supplies of war — forms, books, bonds and stamps by the billion.

Wood pulp today is a vital material of war.

It is used in producing hand grenades, gas tanks, camouflage, ammunition boxes, and hundreds of other fighting aids. It is molded into airplane wing tips. It is impregnated with resins and pressed into metal bearings and gears.

The need is so great that the paper industry is salvaging waste paper and paper board at the

rate of 500,000 tons a month. As a matter of fact, it has never stopped trying to protect its source of supply. While the needed lumber jacks are lacking, vigorous salvage campaigns are helping enormously to supply paper fiber and to make up for steady deficits in virgin pulp. The results have been valuable to every phase of the war effort.

Making a thousand miles of paper a day, as we do, we are in close touch with every need and development in the industry. We know that waste paper will play an important part until peace is ours. Save your paper waste and do it methodically. *Get in touch with your local salvage committee!*

OXFORD PAPER COMPANY

EXECUTIVE OFFICES: 230 Park Ave., New York 17, N. Y.
WESTERN SALES OFFICE: 35 E. Wacker Dr., Chicago 1, Ill.

MILLS AT: Rumford, Maine; West Carrollton, Ohio





A NEW DAY IS COMING IN PRINTING... *Are You Prepared?*

WHAT is your mental picture of the post-war world in view of recent scientific and industrial advances, global improvement in communication and transportation, and greater friendship among nations? Do you envision an amazing new world in the making? As a representative of the Graphic Arts are you thinking of the betterments which will be required in the printing world to keep pace with the industrial and commercial advance?

We of the Levey organization have many definite projects "simmering" which we believe will aid in the evolution of printing once the clouds of war have passed—and to that end we are working with printers, publishers and packaging producers to be ready for

the glorious peace and post-war problems.

Throughout our capable Research, Engineering and Production Departments, we are cooperating with dozens of customers in adapting present equipment to produce better printing and greater production. We have created new resins, vehicles and colors to meet demands for more production without sacrificing printing quality. In most cases this has been done with no increase in printing cost.

We do not visualize any revolutionary change in printing methods or equipment, but we do see a better use of existing machinery. Even now we are working with many on confidential problems that bid fair to produce important developments. Have you a problem you would like to discuss with us?

VICTORY
BUY
UNITED
STATES
WAR
SAVINGS
BONDS
STAMPS

FLASHDRI • LETTERPRESS • LITHOGRAPHIC • GRAVURE

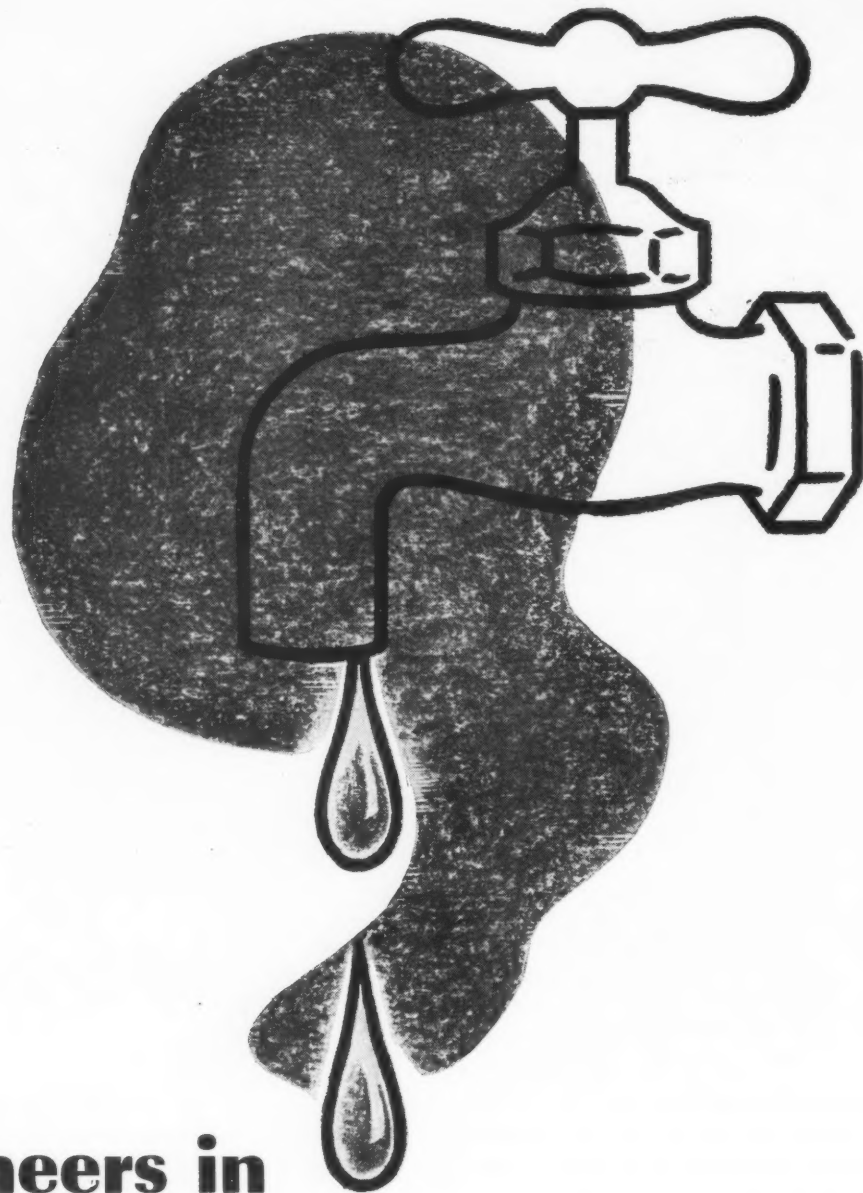


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Makers of Fine Printing Inks Since 1874

PHILADELPHIA • NEW YORK • CHICAGO

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Pioneers in water-dispersed materials

In addition to long experience with latex and water dispersions of crude and reclaimed rubbers, we disperse many elastomers and compositions applicable to use in adhesives, saturations, coatings and dipped goods. Our laboratories and plant are at the service of industry.

Dispersions Process, Inc.

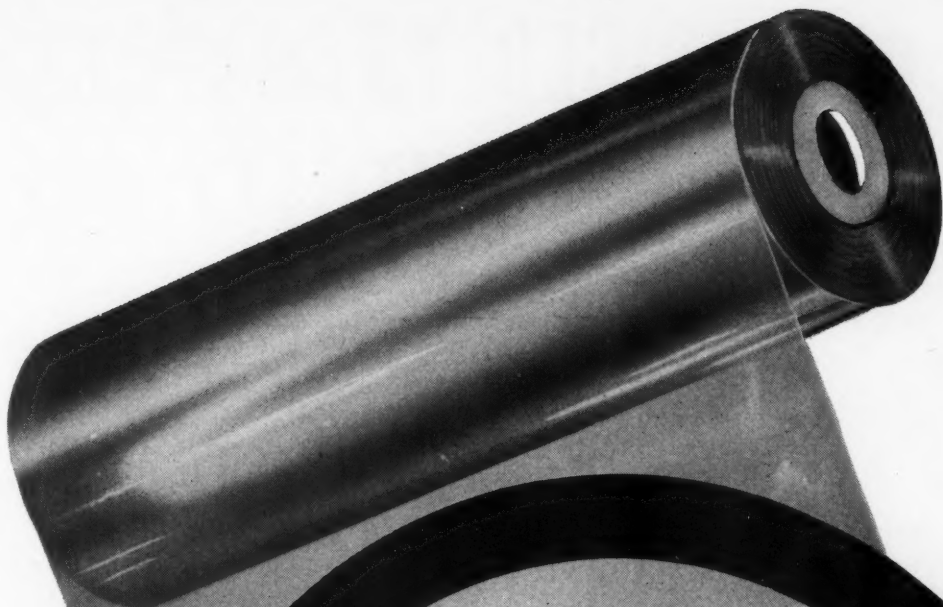
*symbolizing research and development
in water dispersions*



(under management)

UNITED STATES RUBBER COMPANY

1230 Sixth Avenue, New York 20, N. Y.



Sylvania Cellophane*

Transparent! . . . Thin! . . . Tough! . . . Quality's Best Attire! . . . These Sylvania cellophane attributes are invaluable to the proper protection of vital and perishable foods. Because it is also Gas-proof . . . Heat-sealable . . . Non-tacky . . . and Flexible at low temperatures, Sylvania cellophane meets other very important specifications. For all these reasons its present use is restricted to essential and military requirements.

SYLVANIA INDUSTRIAL CORPORATION

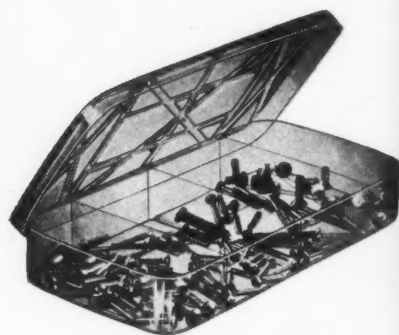
General Sales Office: 122 East 42nd Street, New York 17, N. Y.
Works and Principal Office: Fredericksburg, Virginia

*TRADE MARK REG. U.S. PAT. OFF.

STRONG LOW-PRICED TRANSPARENT UTILITY BOXES



STOCK MOLD
or
CUSTOM MADE



We also manufacture plastics in other forms: injection and compression molded boxes; extruded rods, tubes and special shapes including collapsible tube bodies; acetate and butyrate sheet cut to size in thicknesses from .003" and up.

● We manufacture a complete line of sturdy drawn transparent plastic boxes in all shapes and sizes. Typical models are shown in photo. Every size and shape can be manufactured to meet specifications. Rounds, squares and oblongs are all available, and inserts and partitions may be inserted to meet your requirements.

These boxes are presently being used by the Army, Navy and Marine Corps for a great many purposes. They are used in war plants for storing and routing sub-assemblies and for small parts in repair and service departments. They give protection and visibility at the same time.

Production facilities are ample to handle large orders. Prices and samples will be sent on request.

End use must be permissive under WPB rules and regulations for sample requests and orders to be filled.

THE GREAT AMERICAN PLASTICS CO.

"Plastics Fabricated by Every Method Known to Industry"

INJECTION • EXTRUDING • COMPRESSION • TRANSFER MOLDING • HOLLOW MOLDING & FORMING • SHEETS • ROD-TUBES AND SPECIAL SHAPES

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New York City Sales Agency: 27 West 20th Street • Chelsea 3-0267-8

T
S
D
E



Shelf

*More than just a pun—a statement of fact.
For the standardization program in glass containers
has made it possible to preserve the steady flow
of strength-building foods.*

*We are pleased to have cooperated in this
most necessary work.*



HAZEL-ATLAS GLASS CO.

Wheeling, W. Va.

As white as



JUST LIKE PAINTING A HOUSE,
Coated Lithwite, with its surface
mineral coating, gives you just
the white you want.

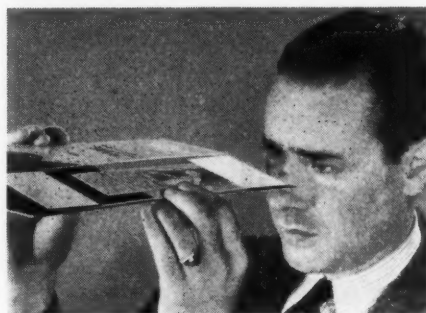
bright as ever!

Despite the shortage of critical wood pulps which necessitate the use of pulps of darker and poorer quality, you can still get folding cartons as white and bright as ever with Coated Lithwite

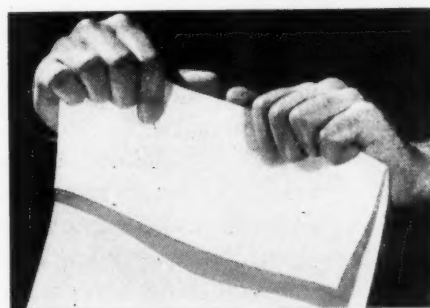
AS YOU KNOW, many high-grade paperboards have been affected by war conditions. But not Coated Lithwite. Its original whiteness and brightness, its brilliant printability, its unusual folding and sealing qualities have been maintained. And the reason: *the surface coating of this revolutionary paperboard is compounded of noncritical materials!*

All of this should be particularly good news to carton buyers. For this genuine *mineral*-coated paperboard enables you to give your packages the advantage of better appearance and, fortunately for you—because there have been fewer problems in the production of Coated Lithwite than in some other high-grade paperboards—limited quantities of it are available.

Write. We will send you printed samples so you can compare the striking qualities of Coated Lithwite with your present cartons. Better still. Send along detailed specifications and a sample of your present carton and we will submit a quotation so you can also make a down-to-the-penny cost comparison with the cartons you are now using.



FINER PRINTING. Coated Lithwite's surface is so uniform and hard, so free from "chalkiness," that inks stand up brilliantly, halftones and type print crisply—without fill-up or smudge.



BETTER PERFORMANCE. Coated Lithwite bends, scores and folds without shattering. Takes a tight seal—and is not temperamental about the type of glue used.

The GARDNER-RICHARDSON Co.

Manufacturers of Folding Cartons and Boxboard

MIDDLETOWN, OHIO



Sales Representatives in Principal Cities: PHILADELPHIA • CLEVELAND • CHICAGO • ST. LOUIS • NEW YORK • BOSTON • PITTSBURGH • DETROIT

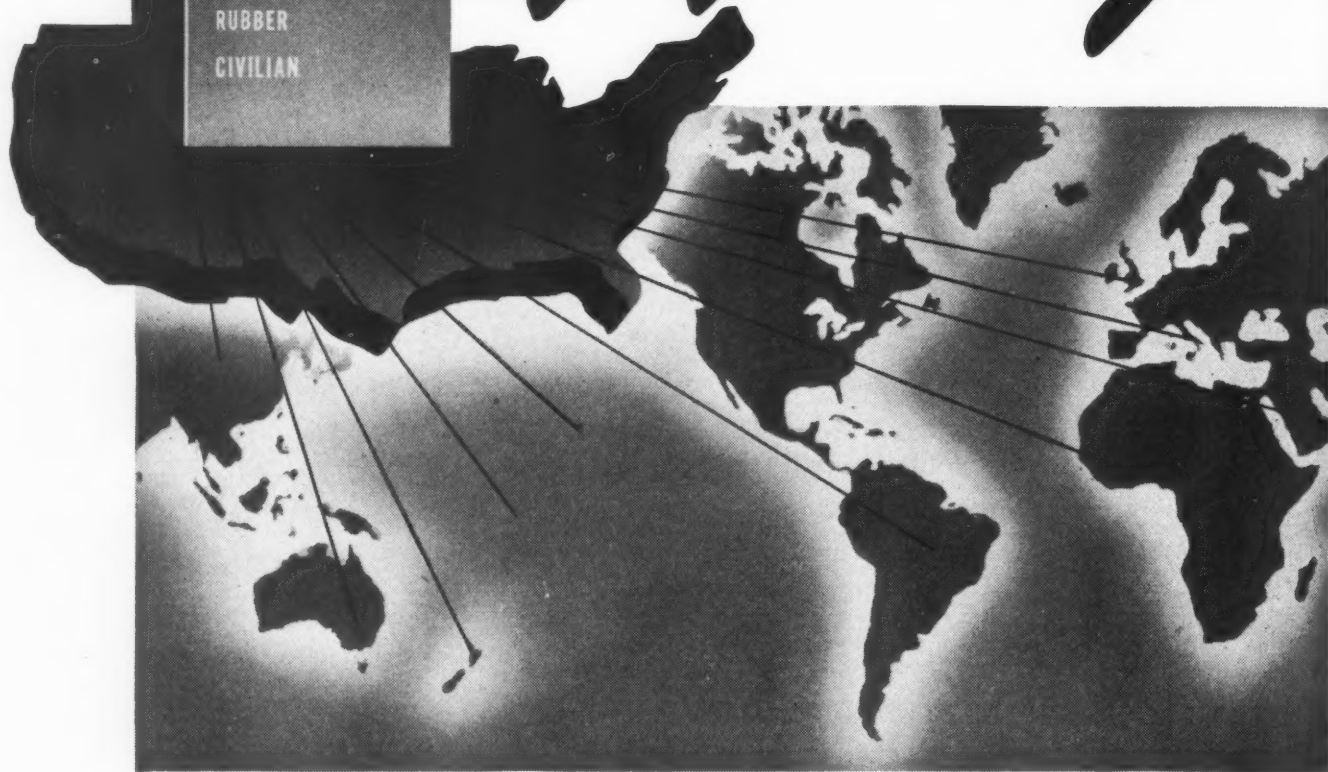
NOVEMBER • 1943

17

WAR DEPARTMENT
NAVY DEPARTMENT
AIRCRAFT RESOURCES
MARITIME
LEND-LEASE
WAR FOOD
PETROLEUM
RUBBER
CIVILIAN

ARE YOUR PACKAGES REALLY

Fighting



There are many paperboard containers going ashore with every landing operation, fighting, healing, feeding. They protect and carry the materiel of war.

But how about the articles you once sold at home in metal, transparent wraps, foil and deluxe containers. Every one of these that has been simplified to save is a job well done. Over-packaging and luxury sizes represent the waste we can't afford. We have to conserve all along the line.

Our organization may be of real help to you. Lighter, more rigid boards, coatings that save fibre, linings that protect—these are a few important aids in making paperboard give the kind of service a fighting nation needs. Strange as it seems, carton planning and redesigning require your attention and action *now*. We must be able to say that all our packages are really fighting to win.



Representatives: E. C. Collins, Baltimore • Bradner Smith and Company and Mac Sim Bar Paper Company, Chicago • H. B. Royce, Detroit
Gordon Murphy and Norman A. Buist, Los Angeles • A. E. Kellogg, St. Louis • Philip Rudolph & Son, Inc., Philadelphia

The amazing can... THAT BLOWS UP A BALLOON THAT CARRIES UP AN AERIAL THAT RADIOS AN SOS!

Fantastic, you say? Yes— but true!

This can is used in a new type life raft for bomber crews. In the top of the can is a hole. Into this is screwed a hose attached to a small balloon. Inside the can is *another can*, which slides part way out like a telescope.

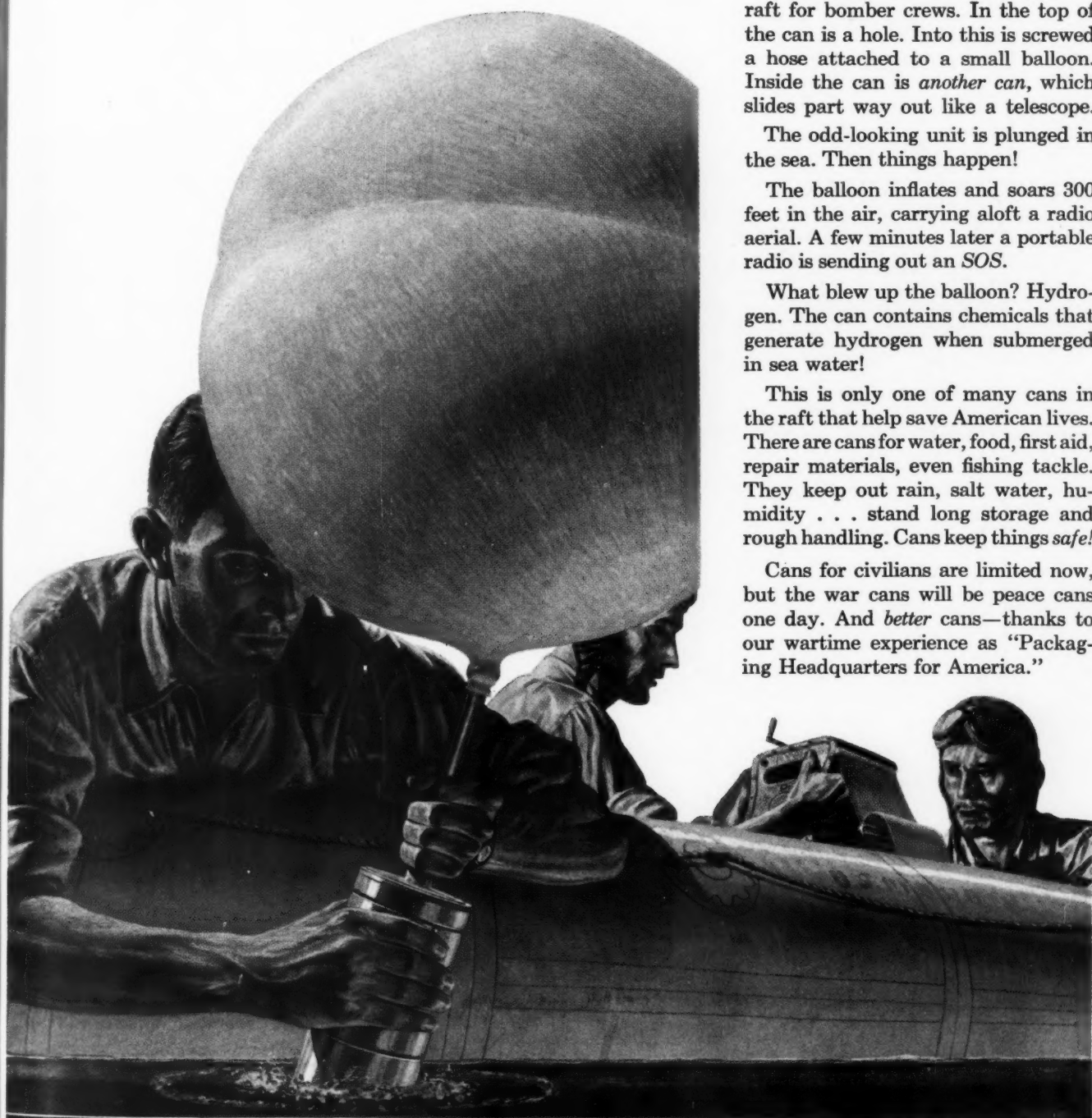
The odd-looking unit is plunged in the sea. Then things happen!

The balloon inflates and soars 300 feet in the air, carrying aloft a radio aerial. A few minutes later a portable radio is sending out an *SOS*.

What blew up the balloon? Hydrogen. The can contains chemicals that generate hydrogen when submerged in sea water!

This is only one of many cans in the raft that help save American lives. There are cans for water, food, first aid, repair materials, even fishing tackle. They keep out rain, salt water, humidity . . . stand long storage and rough handling. Cans keep things *safe*!

Cans for civilians are limited now, but the war cans will be peace cans one day. And *better* cans—thanks to our wartime experience as "Packaging Headquarters for America."



It gets there—safe—in cans

CONTINENTAL CAN COMPANY

100 East 42 St., New York City

HELP CAN THE AXIS—BUY WAR BONDS

Oh! thus be it ever when freedom shall stand
Between their loved home and war's desolation!
Bless'd with victory and peace, may the Heaven-rescued land
Praise the power that hath made and preserved us a nation!
Then conquer we must, when our cause it is just,
And this be our motto - "In God is our trust!"
And the Star-spangled Banner in triumph shall wave
O'er the land of the free and the home of the brave!

LAST STANZA OF THE STAR SPANGLED BANNER
FRANCIS SCOTT KEY

Richard M. Krause
INCORPORATED

52 EAST 19TH STREET NEW YORK, 3, N.Y.

PLIOLITE



THE BEST IS YET TO COME
The new Goodyear Research Laboratory

A real answer to many
MOISTUREPROOF PACKAGING PROBLEMS

PLIOLITE is a protective coating, applied as a liquid —to paper, labels, transparent sheeting and metallic foils.

It increases paper's moisture resistance by 99 per cent —by actual test.*

Pliolite imparts high gloss, transparency and smooth feel.

It is heat-sealing over a wide temperature range. Frequently a **Pliolite** heat seal is stronger than the paper it coats.

Pliolite is readily adaptable to present packaging machinery and processes.

Combined with wax, **Pliolite** can be applied not only

to packages but directly to such products as cheese, because it is tasteless.

Pliolite is not widely available owing to war uses. But for postwar packaging it deserves your consideration. For details write to **Pliolite** Development & Sales Division, Goodyear, Akron 16, Ohio.

*SCIENTIFIC TESTS TELL

"A" — container covered with uncoated glassine paper loses 75 per cent moisture in 7 days.

"B" — container covered with **Pliolite**-coated glassine paper shows virtually no moisture loss over same period.



That's why moisture-hungry products can be safely packaged in **Pliolite**-protected fiber containers or fiber-bodied cans.



PLIOLITE

GOOD YEAR

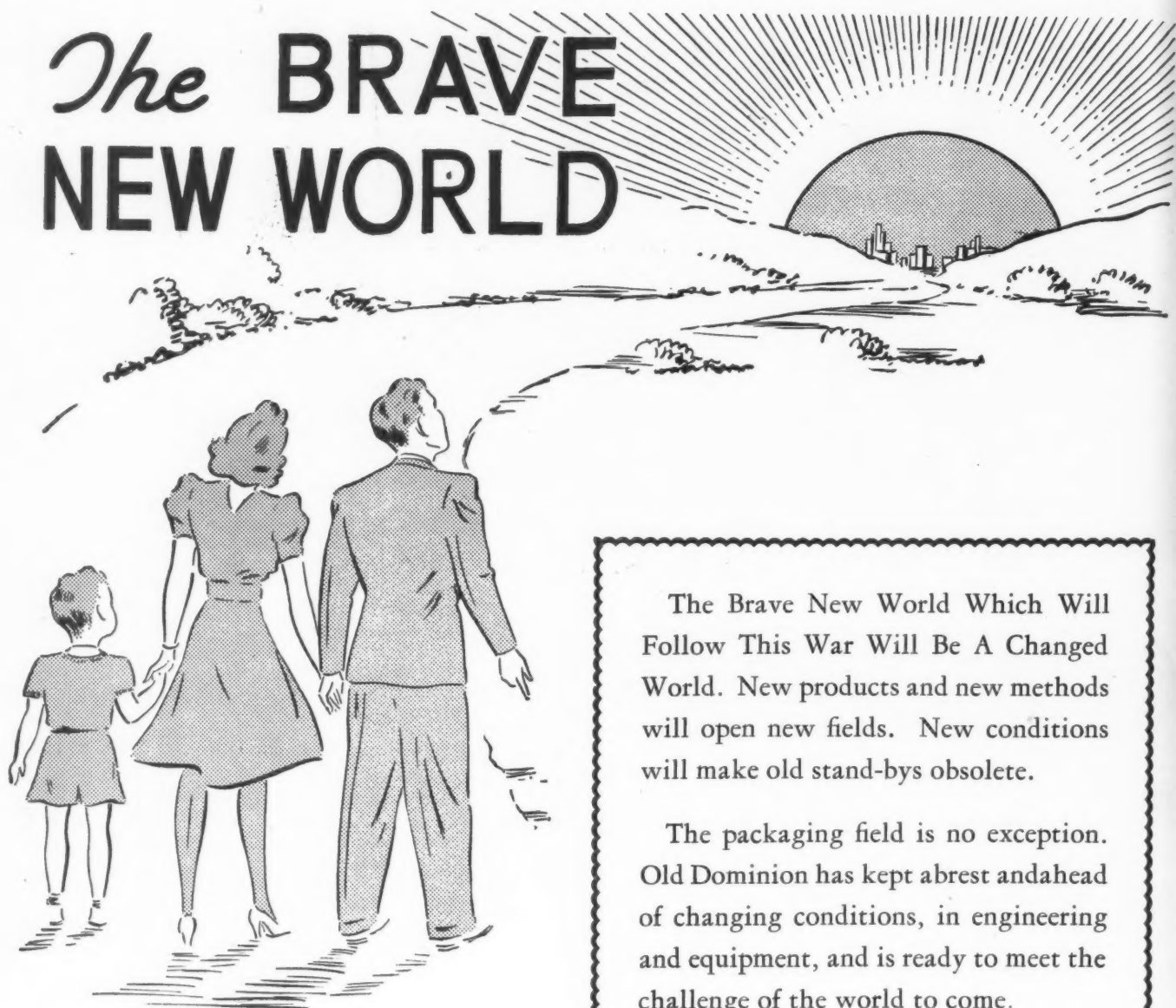
THE GREATEST NAME IN RUBBER

Pliolite—T.M. The Goodyear Tire & Rubber Company

NOVEMBER • 1943

21

The BRAVE NEW WORLD



The Brave New World Which Will Follow This War Will Be A Changed World. New products and new methods will open new fields. New conditions will make old stand-bys obsolete.

The packaging field is no exception. Old Dominion has kept abreast and ahead of changing conditions, in engineering and equipment, and is ready to meet the challenge of the world to come.



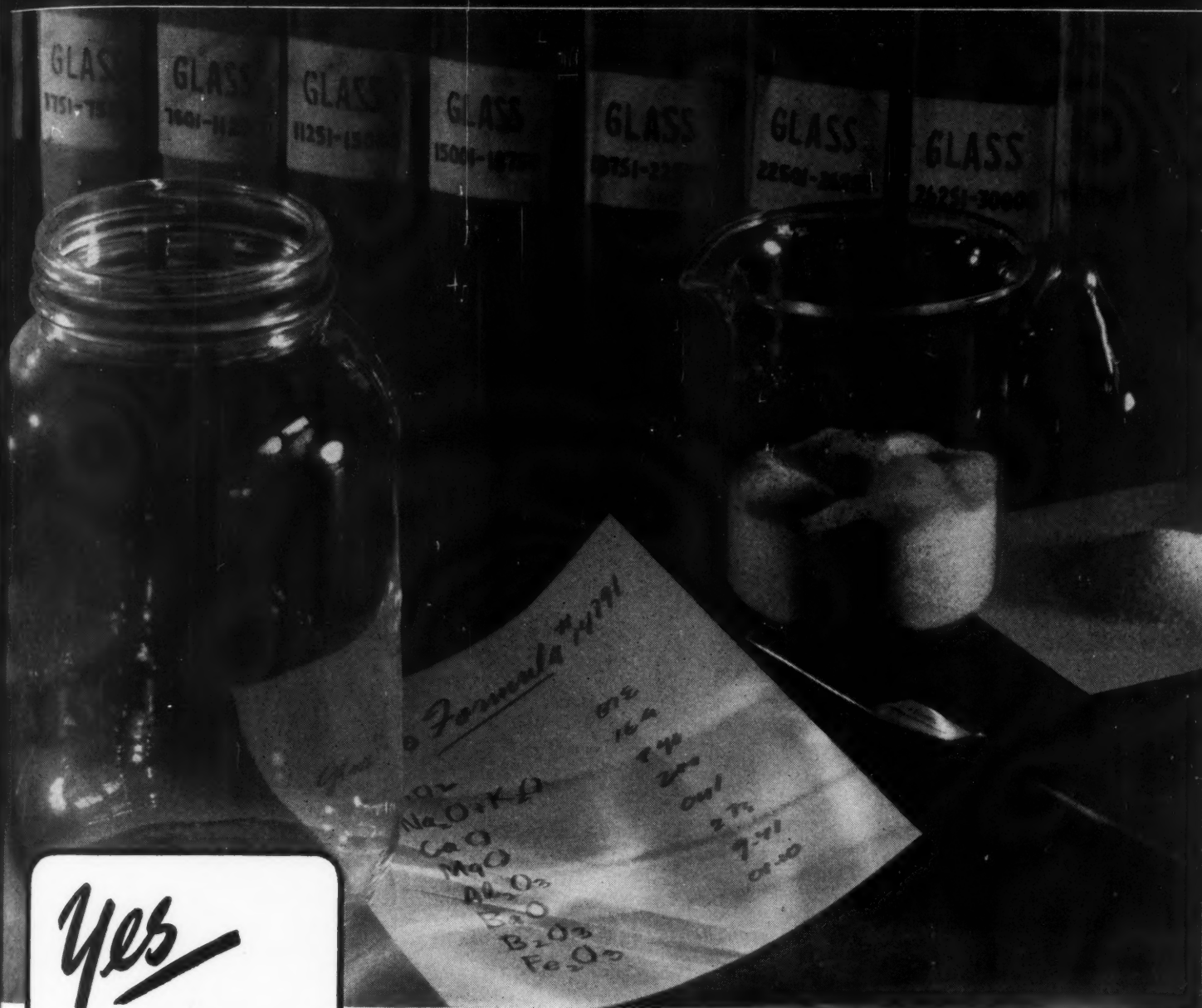
OLD DOMINION BOX COMPANY

CHARLOTTE, NORTH CAROLINA
PLANTS IN NINE SOUTHERN CITIES

Folding Cartons • Set-Up Boxes • Convolute • Spiral Wound and Corrugated Containers

"THE SOUTHERN BOXMAKER WITH A NATIONAL REPUTATION"

YOU CAN MAKE IT 30,000 DIFFERENT WAYS



Yes

**THERE'S A
DIFFERENCE
IN GLASS**

NEXT time you're talking to someone about glass, ask him just for fun how many different kinds of glass he thinks there are. Unless he's a trained glass chemist, we'll wager his eyes will pop when you tell him that there are actually as many as 30,000 different glass formulas.

Not all of these formulas are commercially used, of course. Yet glass manufacturers regularly melt as many as 300 different glass mixtures . . . use over a hundred dif-

ferent ingredients (besides sand) in these compositions. Some of these ingredients are used in ton quantities, while only a few grains of others are needed.

Amazing, isn't it? And even though your interest in glass may be confined to one special line—container glass—the fact that there are so many ways to make glass is important to you. For it proves, beyond question, that there is a difference in glass.

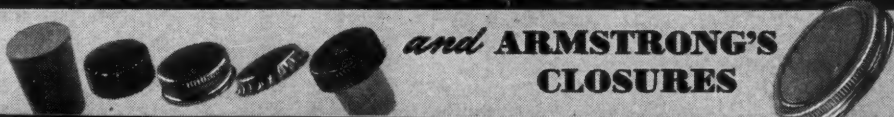
This difference shows itself in many ways . . . such as degrees of brilliance, clarity, thermal shock

resistance, and so on. Individually these differences may not be important, but all taken together, they add up to the big difference between run-of-the-mill ware and top-quality glass. And *that* difference is important to you.

For a graphic description of the facilities and skills that go into the making of high-grade container glassware, send for your copy of Armstrong's booklet, "Men and Glass." It's free. Just write Armstrong Cork Co., Glass and Closure Div., 5911 Prince Street, Lancaster, Penna.



ARMSTRONG'S GLASS



**and ARMSTRONG'S
CLOSURES**

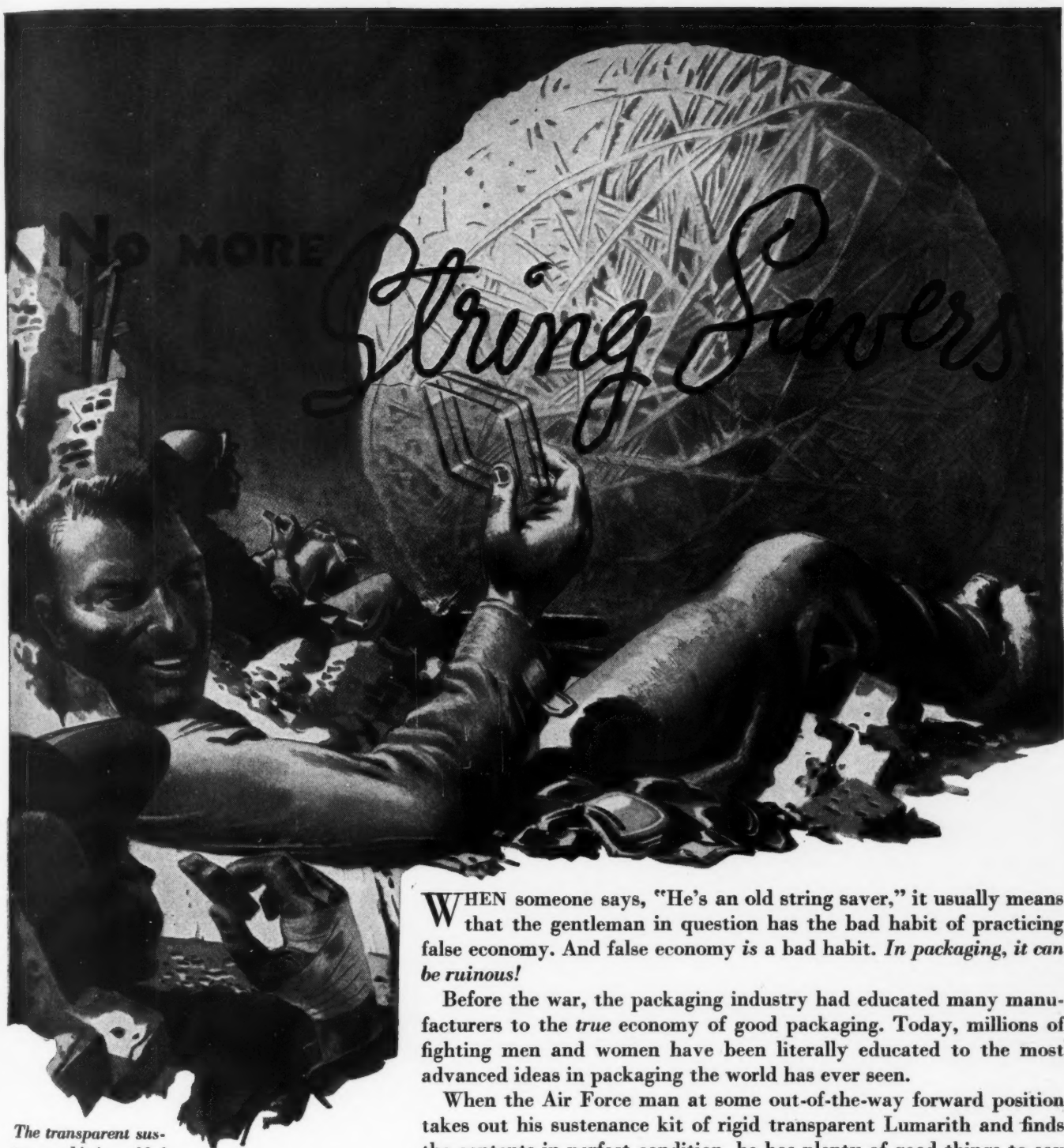


Seven things you should do:

1. Buy only what you really need	2. Pay no more than ceiling prices... buy rationed goods <u>only</u> with stamps	3. Pay off old debts and avoid making new ones	4. Support higher taxes ...pay them willingly	5. Provide for the future with adequate life insurance and savings	6. Don't ask more money for goods you sell or work you do	7. Buy all the War Bonds you can afford- and keep them
----------------------------------	--	--	---	--	---	--

Keep prices down...use it up, wear it out, make it do, or do without

This advertisement, prepared by the War Advertising Council, is contributed by this magazine in cooperation with the Magazine Publishers of America.



The transparent sustenance kit is molded of Lumarith plastic.

WHEN someone says, "He's an old string saver," it usually means that the gentleman in question has the bad habit of practicing false economy. And false economy is a bad habit. *In packaging, it can be ruinous!*

Before the war, the packaging industry had educated many manufacturers to the *true* economy of good packaging. Today, millions of fighting men and women have been literally educated to the most advanced ideas in packaging the world has ever seen.

When the Air Force man at some out-of-the-way forward position takes out his sustenance kit of rigid transparent Lumarith and finds the contents in perfect condition, he has plenty of good things to say for that package.

The citizen buyer, accustomed now to military procurement standards, has a clear picture of the job packaging *should* and *is going* to do for him after the war. He will look for a wedding of product and package which will amplify the product's usefulness and furnish re-use values.

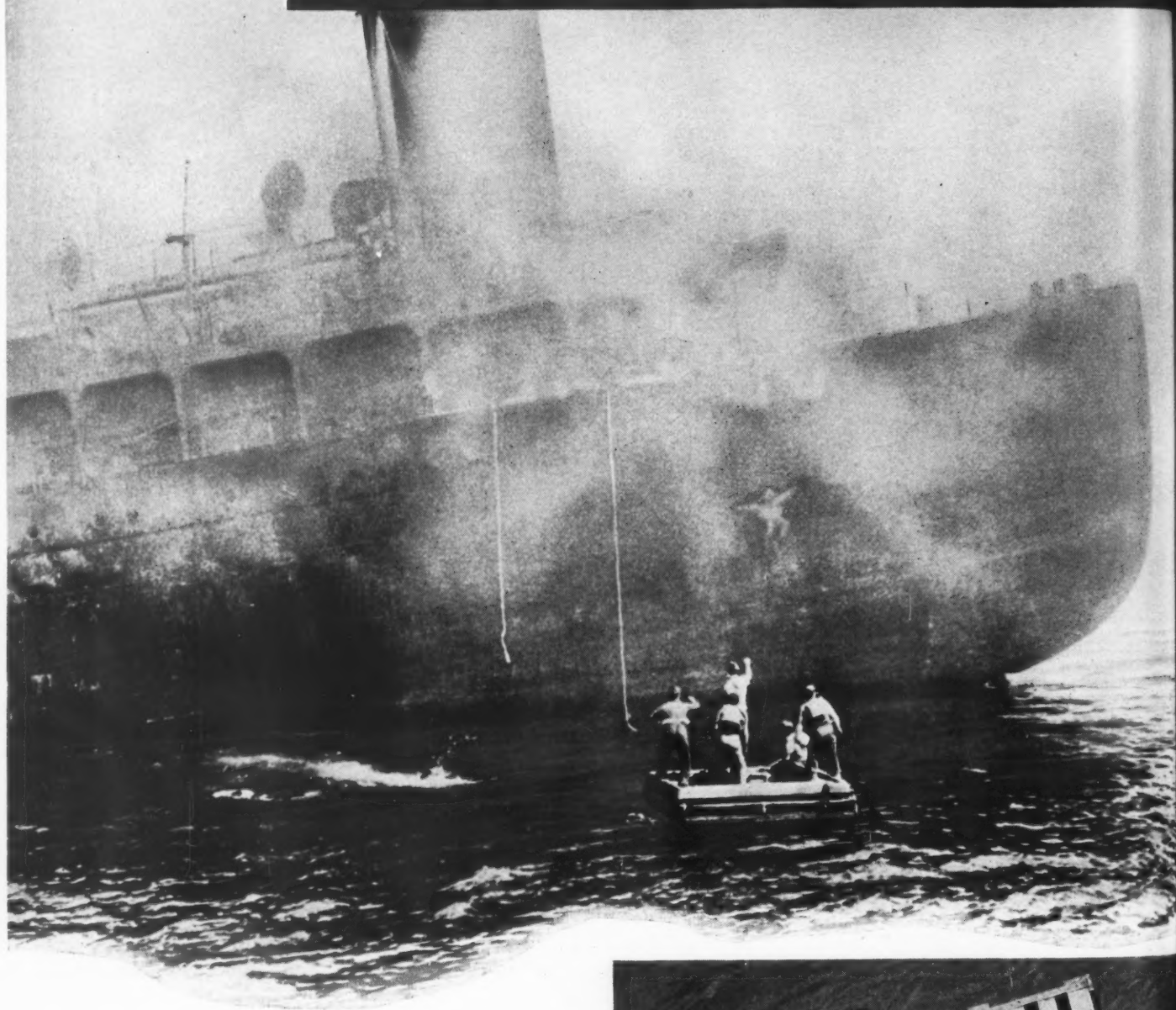
Business will be good for packaging because packaging will be good for business. . . . We have facts that will help you plan. Celanese Celluloid Corporation, *The First Name in Plastics*, a division of Celanese Corporation of America, 180 Madison Avenue, New York City 16.

Lumarith

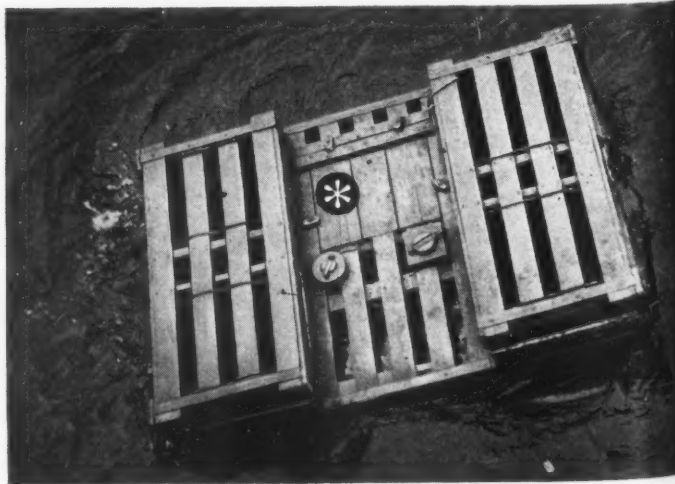
a Celanese Plastic*

*Trade Marks Reg. U. S. Pat. Off.

Life-Saving Stowaway..



ABANDON SHIP! Actual photo of torpedoed ship, above . . . men leaving by life-raft. Right, the raft itself, showing stowage compartment battened down where the First Aid Kit is stored.



ay...in Reynolds "Fighting Foil"

STOWED in U. S. Life Rafts, is the U. S. Navy-developed and specified First Aid Kit pictured below...containing Sulfanilamide, Sulfadiazine, Morphine Syrettes, Iodine Applicator, Boric Acid Ointment and Bandage Compresses.

Here, where packaging can literally stand between a shipwrecked casualty and death, is additional proof of the superior protection of Reynolds "fighting foil." Reynolds uses solid sheets of metal foil, laminated to special processed materials and securely sealed, to make this "combat canister" waterproof. *It is positive protection against moisture-vapor transmission.*

Many forms of this new wartime packaging are now protecting drugs, foods, munitions and critical supplies on every fighting front. To its development Reynolds has brought not only the original skill of the world's largest foil producer...but the initiative that has made Reynolds "America's Great New Source of Aluminum."

Reynolds research and experience will also prove to be a great new source of product development and product-packaging for peacetime consumer markets. Sales representatives available throughout the country.

REYNOLDS METALS COMPANY • FOIL DIVISION
GENERAL OFFICES • RICHMOND, VIRGINIA

THE FIRST AID KIT AND CONTENTS—Convolute wound canister, metal top and bottom. Reynolds "battle-tested" packaging material, applied in the regular labeling operation, saves $\frac{2}{3}$ of the critical material ordinarily used in all-metal containers—plus saving in shipping weight!

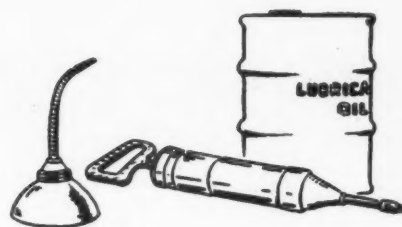


REYNOLDS BATTLE-TESTED MATERIAL MEETS THESE ARMY-NAVY REQUIREMENTS!

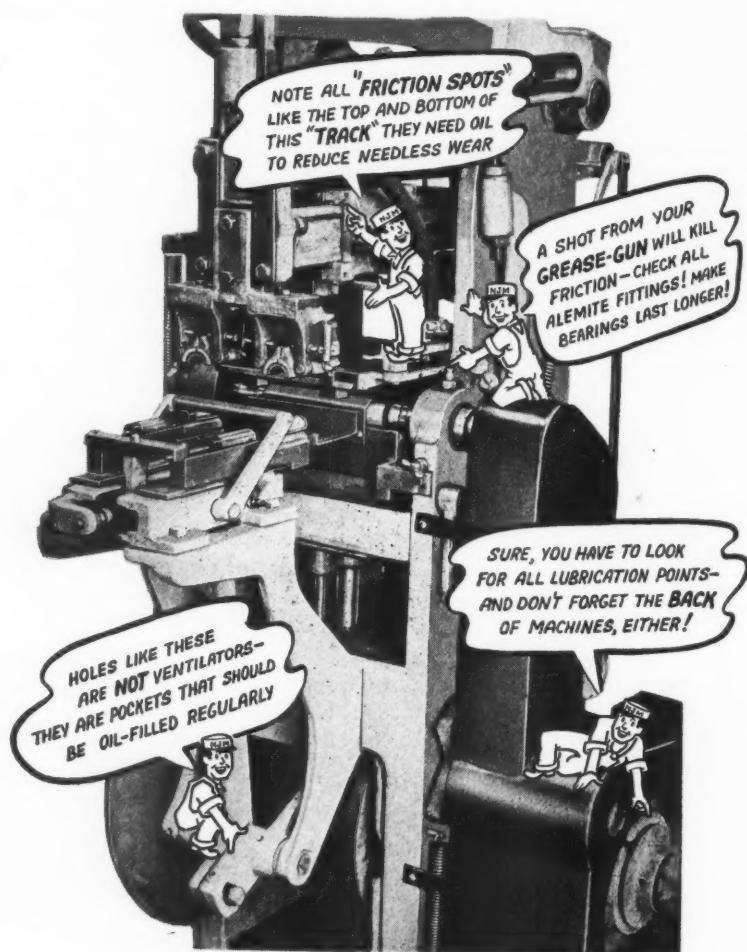
- 1 Positive Protection Against Moisture-Vapor Transmission.**
- 2 Immersion-Proof. Keeps Water Out!**
- 3 Protection Against Insect Infestation, Odors and Light.**
- 4 Substantial Saving in Tin, Steel and Other Strategic Materials.**
- 5 Saving in Space, Especially Shipment and Storage of Empties.**
- 6 Saving in Weight.**
- 7 Serviceability Under Export Conditions.**



Save enough OIL—
and you'll Cripple Industry!



(• NEGLECTED LUBRICATION WILL Sabotage
MACHINES WHICH MUST "SERVE FOR THE DURATION")



7 OUT OF 10
"Service Calls"

show that proper lubrication
has been overlooked!

Keep YOUR machines oiled—REGULARLY!

(Copies of this cartoon for Factory Bulletin Boards, mailed on request.)



NEW JERSEY MACHINE
CORPORATION

1600 Willow Avenue Hoboken, N. J.

Chicago Office: 325 W. Huron Street



EASTERN MACHINE SCREW



CORPORATION
MANUFACTURERS OF



SELF OPENING DIE HEADS
THREADING MACHINES

SCREW MACHINE PRODUCTS
FEED FINGERS

New Haven, Conn.

The Sign of Precision Threading Tools

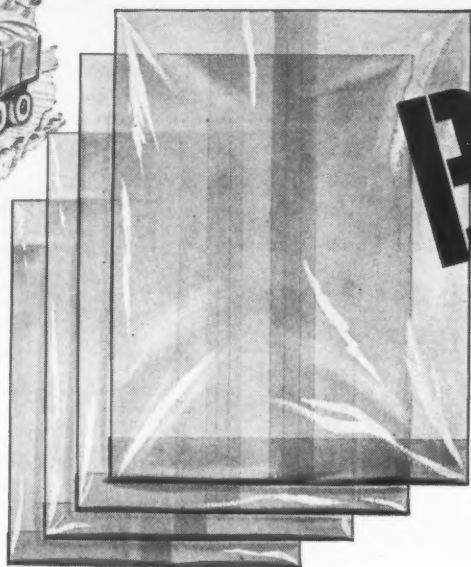
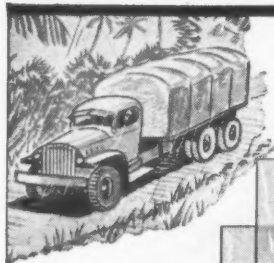
...and the sign for better shipping

For self opening Die Heads Threading Machines and other Masonry products, the H & G trade mark has an enviable reputation. They, like hundreds of other small parts manufacturers, use the one, quick, convenient and safe method of parts mailing. It is the Mason MailMaster, a precision made mailing container, which because of its many sizes, convenient labelling, and convenient closure is the answer to the man-power shortage in the shipping department. For better shipping—safer shipping—use Mason MailMaster.

THE MASON BOX CO.
ATTLEBORO FALLS, MASS.

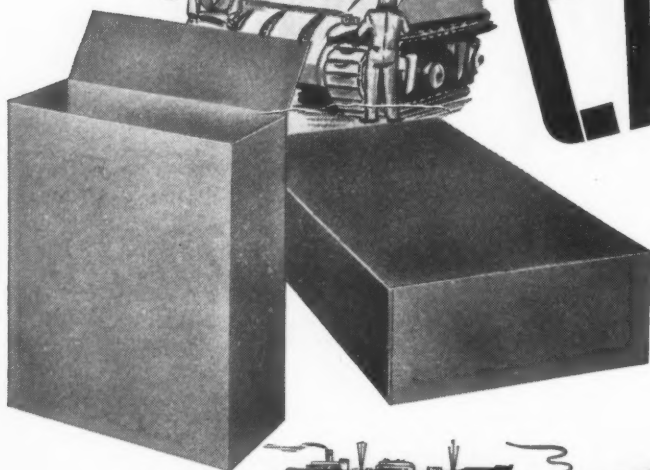
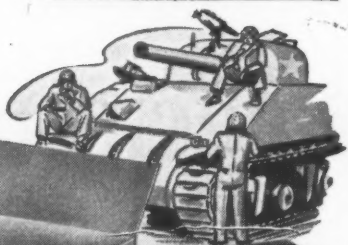
175 5TH AVE.
NEW YORK





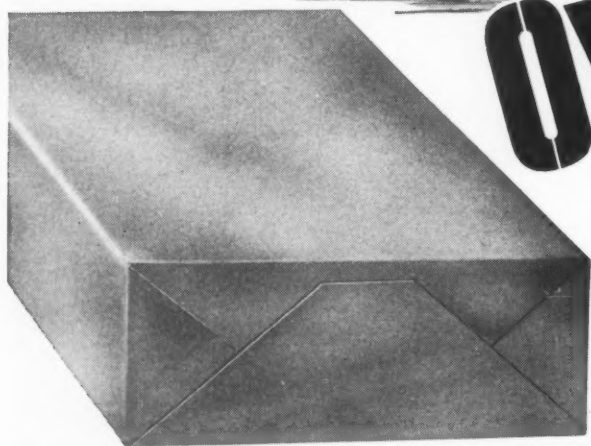
BAGS

What are your bag-packaging requirements? Menasha works in a great range of papers — single, laminated and coated sheets. A number of today's best-known war foods are going safely overseas in Menasha bags.



CARTONS

And your carton requirements? Protection against gain or loss of moisture, against sifting, grease penetration and insect infestation are "built-in" properties of millions of Menasha war goods cartons.



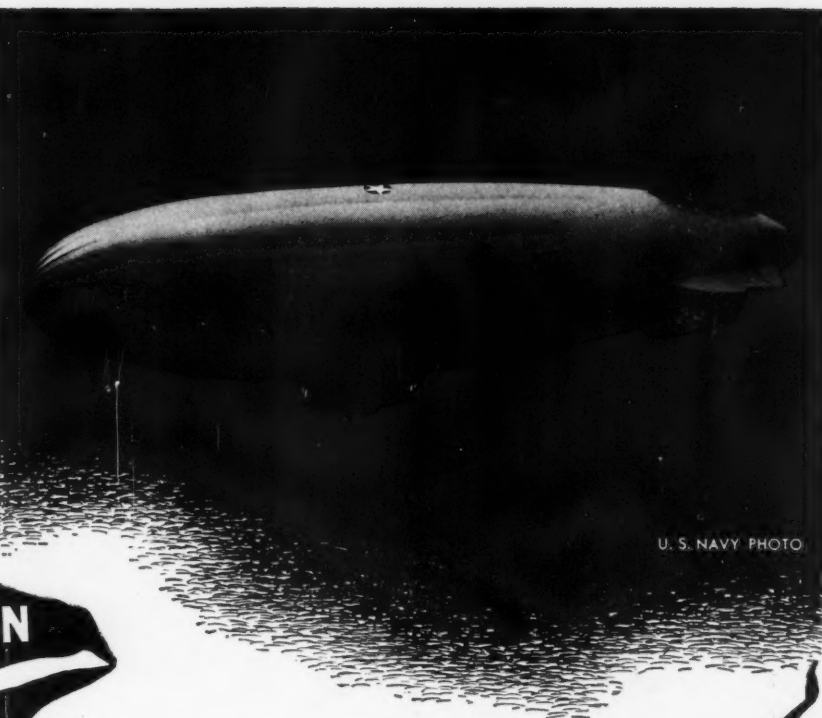
OVER-WRAPPS

Over-wrapping fits readily into production. The required degree of protection and proper resistance to handling can be "built-in" to the single and laminated over-wraps made by Menasha.

THE MENASHA PRODUCTS CO.
Division of Marathon Paper Mills Co.
MENASHA, WISCONSIN

MENASHA PRODUCTS

CARTONS, LINERS
BAGS AND OVERWRAPS



U. S. NAVY PHOTO

A MIRACLE THEN

BUT NOT GOOD ENOUGH TODAY!



*Standardize NOW on Kimble Ampuls,
Serum Vials, Serum Bottles and Clinical
Glass containers of NEUTRAGLAS.*

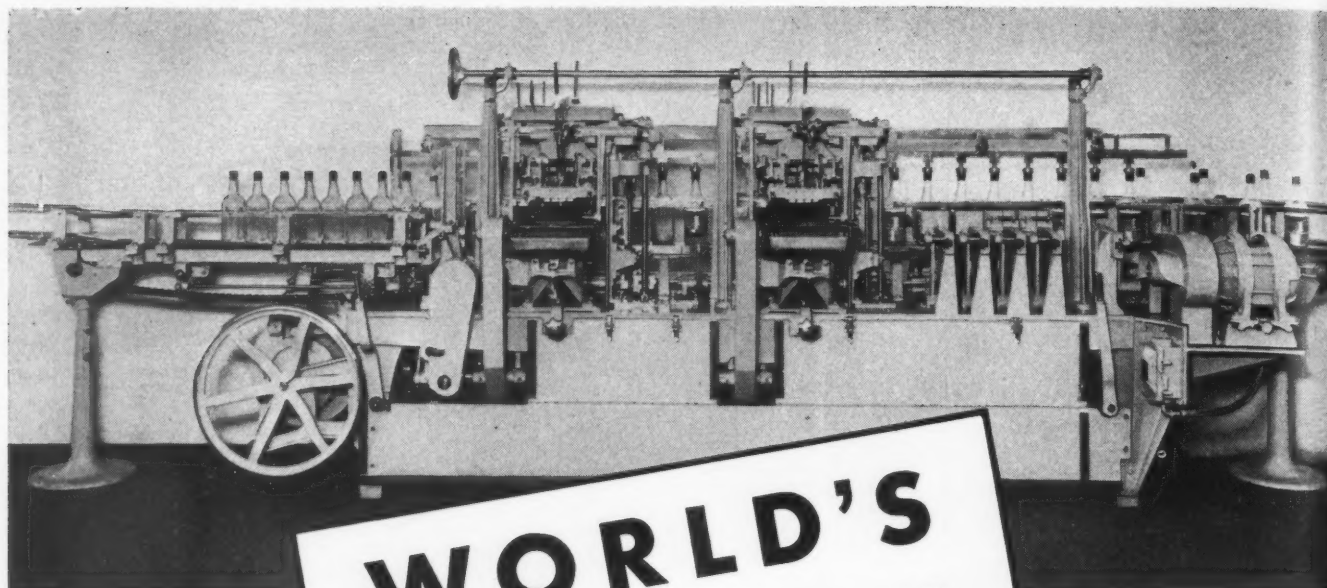
The balloon invented by the Montgolfiers of France in 1783 startled the world. Today, this wonder pales into insignificance beside the modern Navy dirigible.

NEUTRAGLAS . . . offering the highest resistance to solvent action and chemical attack . . . was developed by Kimble because no glassware can be just "good enough" if better is obtainable.



The Visible Guarantee of Invisible Quality

KIMBLE GLASS COMPANY
PHILADELPHIA, PENNSYLVANIA



WORLD'S CHAMPION In the Light Weight Glass Class

The WORLD Automatic BEE-LINE Straightaway Labeler takes 'em gently but firmly through the complete labeling operation in a bee-line, without stops, detours, collisions, jars or jams.

The one pictured above has twin labeling station to handle two bottles at a time at the most efficient operating speed.

The Model HG labels gallon or half-gallon jugs, jars or bottles with equal efficiency and economy.

WORLD BEE-LINE Labelers are the world's best labeling bet, *now*, if you have the priority, or *post-war*, to meet the greater needs of better times to come.

For full information or for assistance on your present labeling problems get in touch with WORLD labeling headquarters.



ECONOMIC MACHINERY COMPANY

Builders of World Automatic and Semi-Automatic Labelers for Every Purpose

Worcester, Massachusetts

NEW YORK PHILADELPHIA PITTSBURGH CHICAGO SAN FRANCISCO DENVER LOUISVILLE
SALT LAKE CITY EL PASO SEATTLE PORTLAND LONDON MONTREAL TORONTO WINNIPEG
SPokane VANCOUVER SYDNEY, AUSTRALIA WELLINGTON, N. Z. SAN JUAN, P. R.

How CEL-O-SEAL protects products that protect HEALTH

CEL-O-SEAL cellulose bands keep bottle closures securely in place. They assure dentists, for example, that each S. S. White dental product is fresh and pure . . . just as when packed.

These strong, tough bands guard against evaporation, leakage and deterioration. They forestall tampering and keep dirt and foreign matter out of the package. They are easily and economically applied. Whenever you have a package-closure problem, consider CEL-O-SEAL. Write to E. I. du Pont de Nemours & Co. (Inc.), "Cel-O-Seal" Section, Empire State Building, New York City.

Also sold by Armstrong Cork Company, Glass & Closure Division, Lancaster, Pa.—I. F. Schnier Co., 683 Bryant Street, San Francisco, Calif.



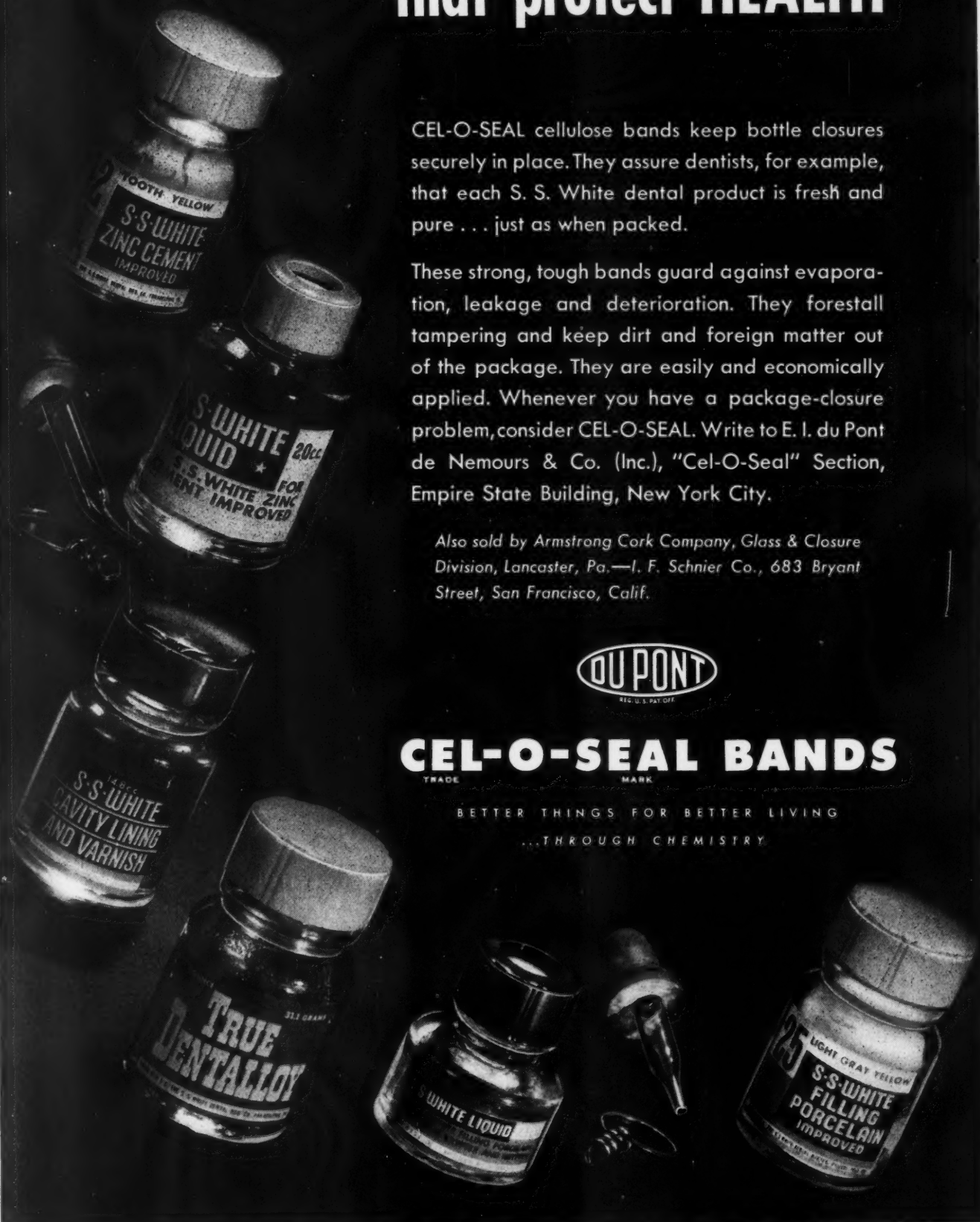
CEL-O-SEAL BANDS

TRADE

MARK

BETTER THINGS FOR BETTER LIVING

...THROUGH CHEMISTRY



Note—
Place this marking directly Over Inside Packing List: Do Not Attach Inside P/L To Lid— If Waterproof Bag Is Used, Tape P/L To Bag. If Box Is Lined With Waterproof Paper, P/L May Be Attached To Item Packed.

P/L INSIDE HERE

When Container Exceeds 10 Cubic Feet, This Marking May Appear On Two Surfaces. Do Not Use Label.

Minimum Letter Height— $\frac{1}{2}$ "
Maximum Letter Height— $\frac{1}{2}$ "
Minimum Distance Between Rows Of Letters— $\frac{1}{4}$ "

Outside Dimensions To Be Shown When Container Exceeds 35 Cubic Feet. (Length, Width And Depth).

Note—
Cube Shall Be Expressed In Whole Numbers And 12ths Thereof As Follows: 36-4; i.e., 36 4/12 Cu. Ft. Express To Nearest 12th.

Note—
If The Description Of Contents Is Too Cumbersome, Abbreviate And Employ Three Detailed Packing Lists (P/L) In Waterproof Envelopes As Follows:
•Place One P/L Inside Of Container Directly Under Lid, Near One End.
•Place The Second P/L On End Bearing Description Of Contents, S W L No., Etc. And Cover With Either .080 Weatherproof Fiber Or 3/16" Weatherproof Plywood.
•Place The Third P/L On The Same Surface. This List Does Not Need To Be Covered.

Contract Data Shall Include:
•Quantity And Description Of Contents. (Abbreviate Description Of Contents If Necessary)
•Name Of Contractor.
•Contract Number.
•Weight.
•Cube.
•Case Number: As No. 13 Of A Shipment Of 50 Cases.

Area Of Label Or Stencilling Shall Not Exceed 42 Square Inches.
All Letters Shall Be The Same Height: Minimum Letter Height— $\frac{1}{4}$ "

Stencil Or Label Showing Consignor And Consignee Shall Be Used For Less Than Carload And Less Than Truckload Shipments.
Area Of This Label Shall Not Exceed 28 Square Inches.

Note—
Not Necessary In Full Carload Or Truckload Lots.

Paint Or Stain Diagonally Opposite Corners Ordnance Yellow On Three Adjacent Sides. (See Specification 3-1, No. 4)

Ordnance Insignia. Paint Or Stain Ordnance Yellow. Size Shall Be Commensurate With Size Of Box With A Minimum Height Of 5 Inches. (Flame Height Approx. $\frac{1}{4}$ x Dia. Of Bomb)

Any Markings Or Labels Required By Law, Governmental Regulations, Carrier Traffic, Etc., Such As "Inflammable" Or "Explosives" Confine Such Markings To Surface Containing Contract Data.

Do Not Place Any Markings Below This "Line". (DOTTED LINE NOT TO APPEAR ON CONTAINER)

Lower $\frac{1}{2}$ Of Surface Reserved For Overseas Markings.



REVISIONS

NO.	DATE

CINCINNATI ORDNANCE DISTRICT
EXPORT MARKINGS
APPROVED BY—
OWN BY—W.K.B. DATE—4-18-43

Dwg. No. 246



PACKING LIST

PROTECTORS

REQUIRED BY ARMY DIRECTIVE ON ALL FOREIGN SHIPMENTS

Recently the army has issued a directive to all branches of the service requiring that at least one packing list be covered with a 3/16" plywood or .080 weatherproof fibre cover. We make these covers as Army specifies from .080 weatherproof fibre board, in several sizes. Center is concave-dished, to allow room for lists underneath. The words "packing list" are deeply indented on all covers and cannot wear off. See your nearest paper goods jobber or write the undersigned.

WESTERN PAPER GOODS CO., 1230 W. EIGHTH ST., CINCINNATI, O.

Eastern Distributor

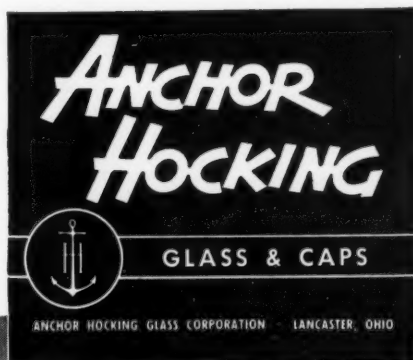
Samuel Cupples Envelope Company, 360 Furman Street, Brooklyn, N. Y.

HOW CAN AN ANCHOR HOCKING
SALESMAN HELP ME, MR. NOLAN?

IN A NUMBER
OF WAYS OUT OF
THE ORDINARY

JOHN R. NOLAN, one of Anchor Hocking's ablest
and most popular men, has been a member of the
Anchor Hocking family for 18 years.

Anchor Hocking salesmen know their glass containers, closures and sealing machines thoroughly. And because of the extent of their line, they are not prejudiced in favor of any one item, giving you only the counsel that is in your own best interest. They know filling, sealing, processing, production...transportation problems, display and merchandising techniques—and costs. And they know these things—not in theory or out of a manual—but after years of daily contact with packers of a wide diversity of products. On many occasions they have rolled up their sleeves to help solve perplexing customer problems. And with all this, they give you in full measure the usual sales services you have a right to expect.





Meyercord Decals

ASSURE FAST, COLORFUL BRAND IDENTIFICATION

Smartly designed packages deserve smart, modern identification. Investigate the unlimited effects in color and design obtainable with genuine Meyercord Decalcomania. Any number of colors, any design can be reproduced in any size—for application on glass, wood, plastic, glazed crockery, etc. Special production line techniques provide speedy, economical application on flat or curved surfaces. The durability and permanent adhesion of Meyercord Decals protect your brand-mark for the life of the product...and serve as permanent salesmen for repeat purchases. For full details write Dept. 811.



Salon Palmer, Inc., New York, N.Y. use this multi-colored Meyercord Decal brand-mark (brown, yellow, and red) on the smartly designed blond wood package (illustrated above) containing their ASCOT BRAND Shaving Soap.



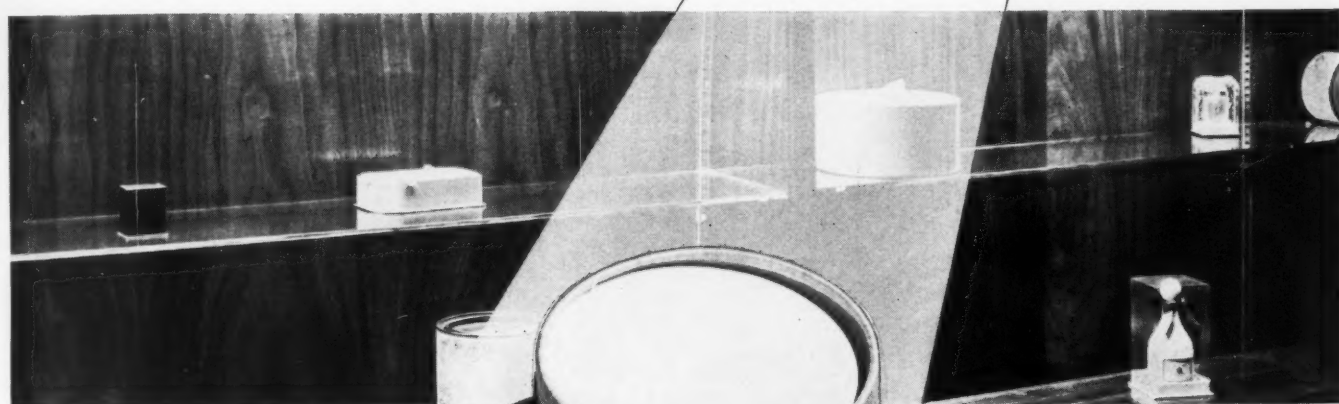
Back the Attack... Buy War Bonds

THE MEYERCORD CO. CHICAGO

Main plant and general offices: 5323 WEST LAKE STREET, CHICAGO 44, ILLINOIS

Sales offices in principal cities of U. S. A., Mexico and South America

IS This The Time TO MAKE A PACKAGE CHANGE?



WHAT BETTER TIME THAN NOW!

Selling is no problem. With rationed buying and restricted production, a new package can be quickly introduced—firmly established *before* competitive selling conditions return. And without losing volume while doing so.

LOOK AHEAD to the post-war market. This much we can see now: Selling will be no cinch! You'll need

every sales weapon at your command. Including better, more productive packages that dealers instinctively want to display.

WHY NOT GET SET NOW with a vigorous new package? A package that's

easy on the consumer eye—easy to use—economical to buy.

CONSULT RITCHIE package engineers and designers. They are glad to help you prepare for tomorrow's needs—today. No cost or obligation.



W. C. *Ritchie* AND COMPANY
8849 BALTIMORE AVENUE • CHICAGO

NEW YORK • DETROIT • LOS ANGELES • ST. LOUIS • MINNEAPOLIS

SET-UP PAPER BOXES • FIBRE CANS • TRANSPARENT PACKAGES

Compare

OUR WORDS *with* OUR DEEDS

Hazen has claimed many fine qualities for its Repellal papers, and application under battle conditions has proved the substance behind our words.

We said they were:

Greaseproof

Flexible & Non-Flaking

(won't gum precision parts)

Heat-Sealing

(seal is stronger than paper)

High-Heat Resistant

To date Repellal papers have been used successfully to pack:

Rifles

Carbines

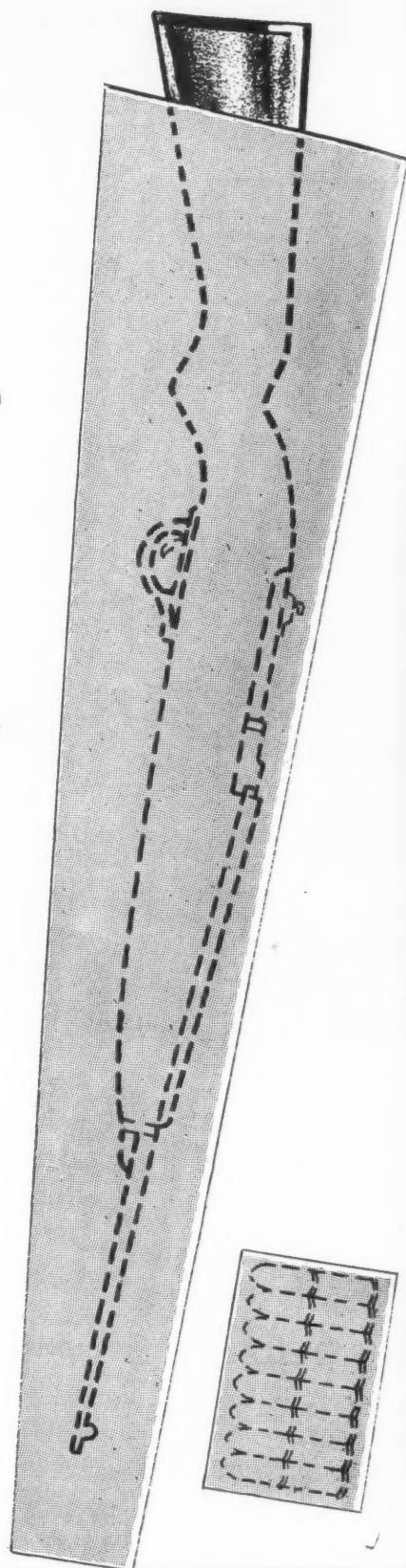
Cartridge Clips

Ordnance Spare Parts & as All-Purpose Protective

Bags and Envelopes

A Note on Civilian Production

We still make a limited amount of some box-covering papers which were our stock-in-trade before the war.



HAZEN PAPER COMPANY
HOLYOKE, MASSACHUSETTS

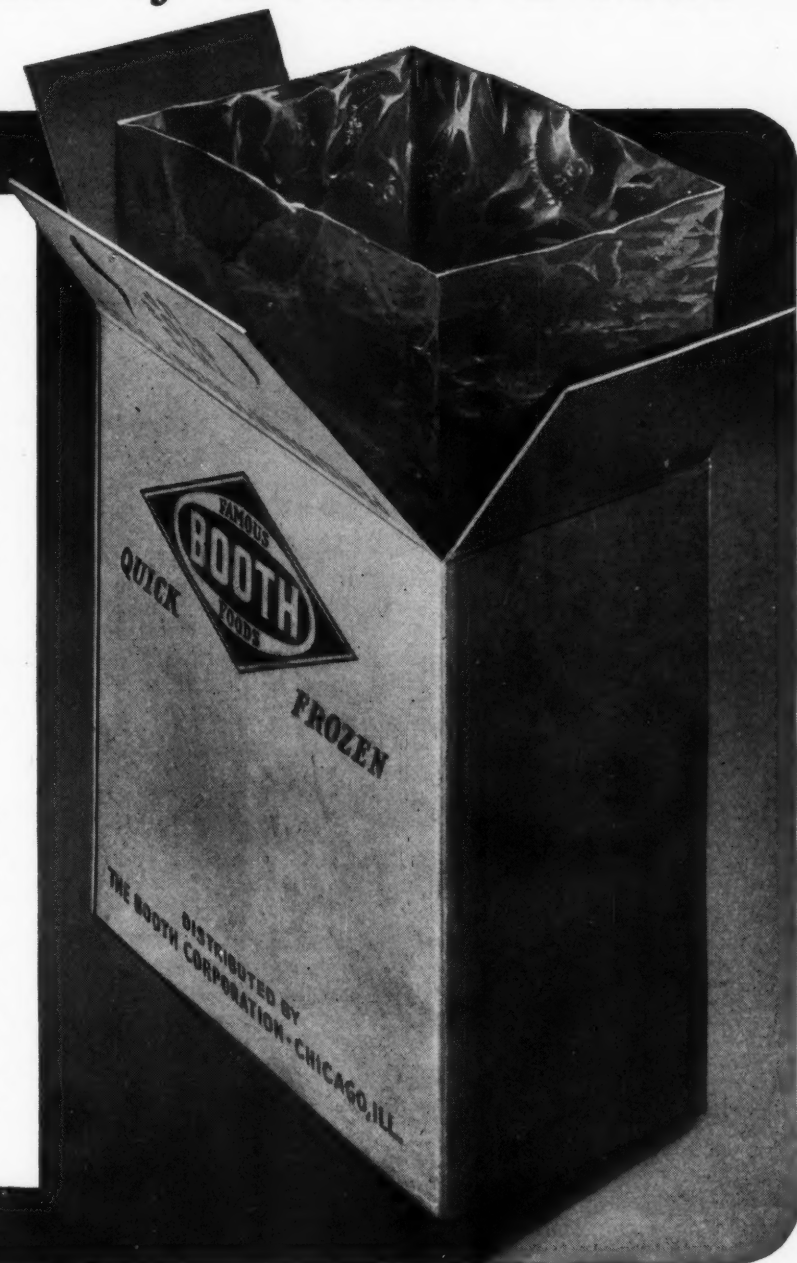
BOOTH ADOPTS CELLOPHANE BAG-IN-BOX *for Bulk Packs of Frozen Foods*

PROFITING from the long experience that Booth Corporation has had with the use of Cellophane as a protective packaging for Frozen Foods, they have now adopted the latest improvement of the Cellophane bag-in-box container for their 30-pound bulk packs of frozen strawberries, cherries, peaches, pineapples and other fruits. They report it is a very satisfactory metal replacement.

- The tough bag of laminated Cellophane gives the fullest measure of protection for the contents. The sturdy fibre board carton provides the necessary structural strength.

- This new unit is easy to handle in all production operations—filling, freezing and defrosting. Its shape saves space in storage and shipping.

If you have a metal replacement packaging problem, perhaps the Cellophane bag-in-box may prove the answer. Just write to E. I. du Pont de Nemours & Co. (Inc.), Cellophane Division, Wilmington 98, Delaware.



Cellophane

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY



➡ **THIS SPACE
RESERVED
FOR TIP-ON**

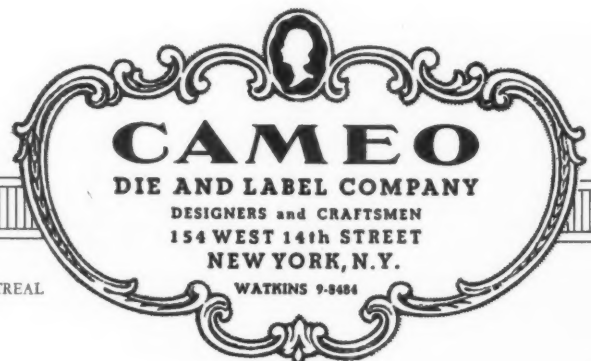
AMONG the minor war casualties are the beautiful tip-ons we used to put on our advertisements in this magazine.

Before the war they were of foils, fine papers and fabrics. Later we were still able to illustrate our service with embossed and color-printed paper.

Now even the paper is scarce, as is our manpower. We are devoting every ounce of our production to important work—and there's none to waste advertising ourselves.

After the war you'll see our tip-ons again. And they'll be more beautiful, different from any you've seen. They'll be worth waiting for.

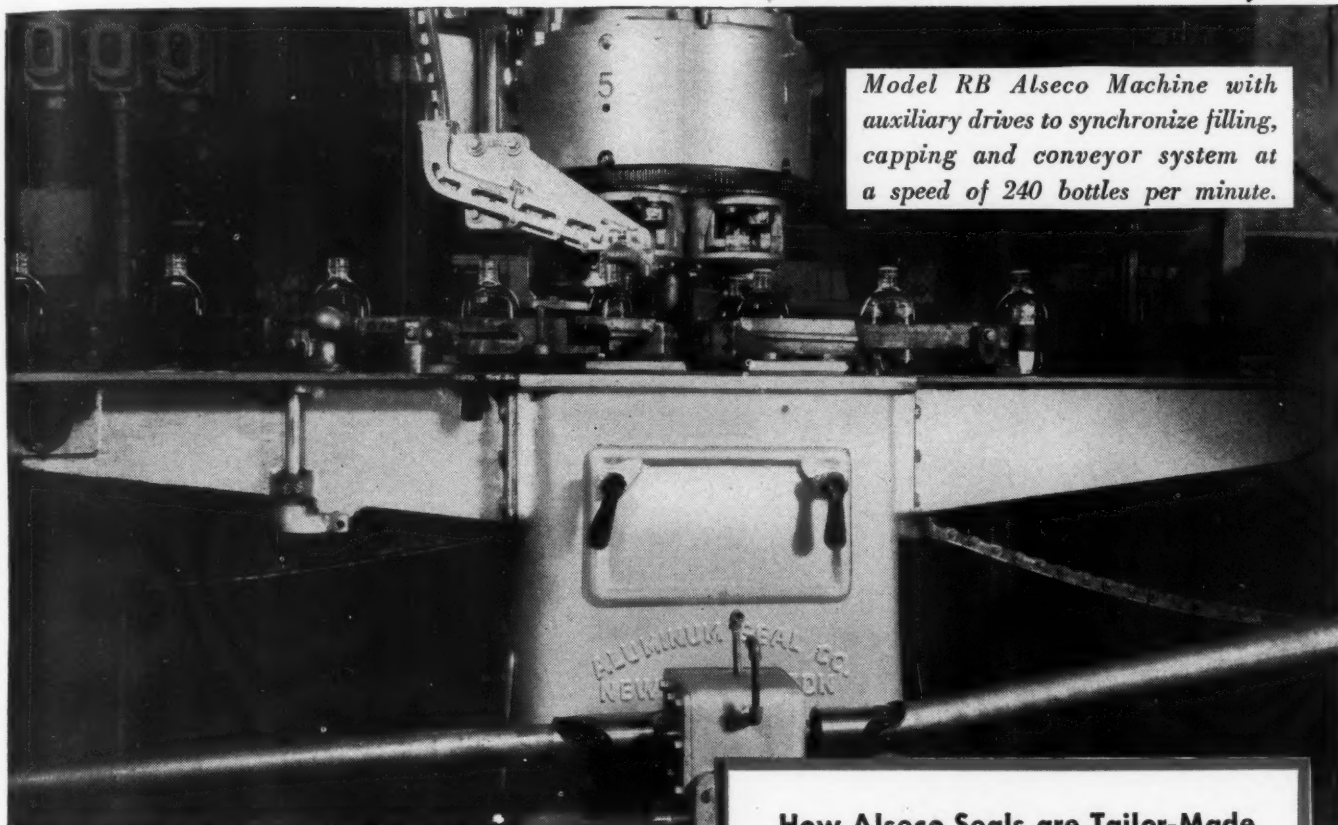
Meanwhile, we may be able to serve you with fine embossing, die-cutting and color-printing on available materials.



IN CANADA: CAMEO METAL SEAL & LABEL CO., LTD., 371 DOWD ST., MONTREAL

HELPS YOU GET

Hard-to-get Dollars



Model RB Alseco Machine with auxiliary drives to synchronize filling, capping and conveyor system at a speed of 240 bottles per minute.

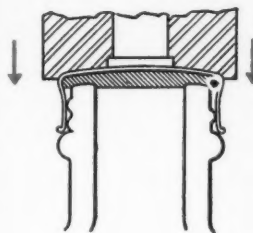


Hard-to-get Dollars are the rare variety that stick with you after the subtraction is over ...subtraction of labor costs, raw materials, taxes, and all the rest.

Efficient, automatic Alseco sealing machines help you snag extra dollars of this choice breed by boosting your line's output per man-hour. They apply tailor-made Alseco Seals (see diagrams) with the speed and efficiency that will be vital in postwar competition.

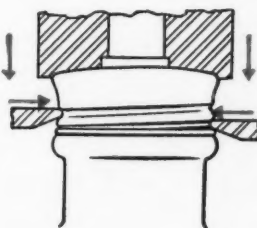
Now is the time to start your planning, so write us today for facts and figures.

How Alseco Seals are Tailor-Made



1. Plain-skirted Alseco Seal is uniformly seated. Under stationary top pressure, container lip is embedded in liner evenly all around.

2. While held in that position, threads are Rolled-On to conform exactly to threads on container. Each seal is tailor-made, fits perfectly.



Trade Mark Reg



U. S. Pat. Off

ALSECO

SEALS AND SEALING MACHINES

ALUMINUM SEAL COMPANY • 1345 THIRD AVENUE • NEW KENSINGTON • PENNSYLVANIA
At your service: 30 years of experience building quality seals and sealing machines.





...Clear is the call —

... And we've answered it! Calls for adhesives that must meet global weather conditions! Glues that could take the roughest handling and stick to the job! Tenacious adhesives that hold together the shipments of precious supplies "come hell or high water" for American fighting men on all fronts!

Manhattan glues are right in the thick of home front production, too, delivering the many and varied types of adhesives for all industry! For that reason we can still welcome your inquiry and promise you prompt and expert advice on your present adhesive problems.



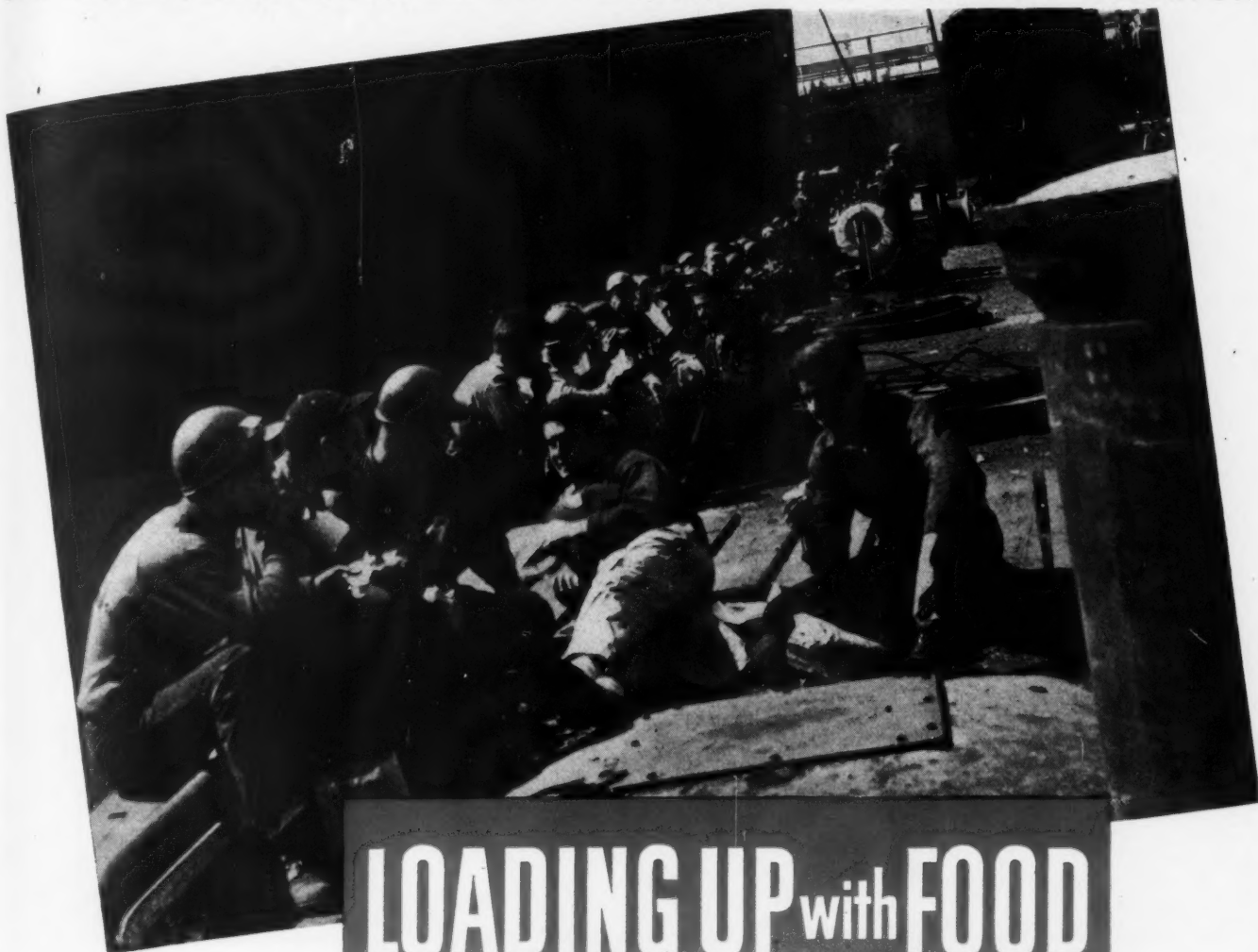
MANHATTAN PASTE & GLUE CO., INC.

Chicago
Philadelphia
Rochester
Boston
Columbus, O.

Lion Brand Adhesives

125 GREENPOINT AVENUE, BROOKLYN, N. Y.

AN AMERICAN INSTITUTION WORKING WITH AND FOR AMERICA



LOADING UP with FOOD

AMERICA'S GREATEST WEAPON

These fighters on the homefront are taking a well earned recess to stoke-up for another "go" at the strenuous job ahead. Workers in our war plants, subjected to exacting effort and nerve-shattering machines, pay heavy toll in loss of physical stamina. To replenish reservoirs of energy, adequate nutrition is a national "must." Flavorful food of appetizing freshness is essential to America's fighters everywhere. The time interval between production, processing, storage and consumption of edibles demands that invulnerable protective packaging be employed. Otherwise these "saboteurs"—Waste, Spoilage and Contamination will move in. To the cause of food protection, we bring perfected products that are the result of years of close association with the food packaging needs of the Nation. Rhinelander's protective papers are on the job for the duration—and thereafter.



FROM THE BEST THAT'S MADE TO THE CHEAPEST THAT'S GOOD

Genuine Greaseproof
Coffee Bag Papers
Confectionery Papers

Cereal Wrapping Papers
Laminated Greaseproof Papers
Lard and Shortening Liners

Bakery Product Wraps
Cracker Box Liners
Greaseproof Innerwraps

Wax Laminated Glassine
Opaque Label & Bag Glassine
Packing Industry Wrappings

RHINELANDER PAPER COMPANY • MILLS AT RHINELANDER, WISCONSIN, U. S. A.

NOVEMBER • 1943

43

Beauty

AND

*Utility**



* Seamless

* Shatterproof

in **Clearsite** *containers*

Nothing can surpass the excellence of CLEAR-SITE in containers that must combine all the eye-appeal of beauty with the rugged *shatterproof* quality inherent in ALL CLEARSITE containers. Available in vials, jars and tubes

The demands made upon us for many forms of containers for Government use can be traced directly to their reputation established in Industry. Celluplastic containers helped to raise the standards of packaging in drug and pharmaceuticals, sundries, novelties, hardware, machine, instrument and watch parts and a host of miscellaneous products.

for all manner of products; the one shown above is process-labeled in gray, scarlet, black and white on a transparent container. The beauty and simplicity of design is matched by the positive protection of CLEAR-SITE. Our staff of designers and technicians are always at your service.

Ask for details



HYCOLOID-CLEARSITE

CELLUPLASTIC CORPORATION

60 AVENUE L

NEWARK, N. J.

A NAME IN *Modern* PACKAGING



F R A N K D . P A L M E R , I N C .

528-34 North Western Ave. • Chicago, Ill. • Chesapeake 3344

PACKAGE DEVELOPMENT LABORATORY ★ SPECIAL MACHINERY MANUFACTURERS

REMEMBER WHEN

you could obtain

KELLER-DORIAN STAINLESS METAL PAPERS

in the finest foil finishes

also

ALUMINUM AND
TINCK PAPERS?



Now . . . we are serving our government and we ask your indulgence if your orders for such materials as are available are delayed . . .

**BUY BONDS TO HASTEN THE DAY OF PEACE . . . AND THE
RE-ESTABLISHMENT OF OUR DEMOCRATIC IDEALS . . .**

which will bring you better standards of quality and workmanship—a more varied presentation—the result of knowledge and experience gained in the crucible of war.

KELLER - DORIAN CORPORATION

516 WEST 34TH STREET • NEW YORK, N. Y.

Look over your packages...

without rose glasses!



Sure, almost anything sells today, in barrels or in the "nude." But there'll come a time when folks will be more persnickety, and that's when your product will rise up and shout for a protective and an attractive package.

More than ever, your product will need sales appeal. Its advantages must be apparent to every clerk, and it will need to stand out among others in the kitchen cupboard or the bathroom cabinet.

So, now is the time to throw away the rose-

colored glasses, and give your package a realistic appraisal. Perhaps it needs one of the many types of converted cellophane, or laminated films or foils which are our specialties.

Even though our production is largely on War work, our Packaging Specialists have some time to think, and they are eager to work with you. Because improved packages can't be designed and proved over night, we suggest that you start now. There's no obligation.

THE **DOBECKMUN** COMPANY

3301 MONROE AVENUE, CLEVELAND, OHIO • WESTERN PLANT, OAKLAND, CALIFORNIA



HOT COFFEE . . . and fresh

thanks to *Sanitape-Sealtite*

THE Army knows well what coffee means to the boys, and they not only include it in the field ration, but specify *unit-wrapping—to be sure that it is dry and fresh and of assured strength. *Sanitape-Sealtite affords complete protection against moisture, rain and actual immersion—a unique method of packaging which has proved itself both in war and peace.



Army Field Rations include packages of soluble coffee—wrapped by Sanitape-Sealtite.

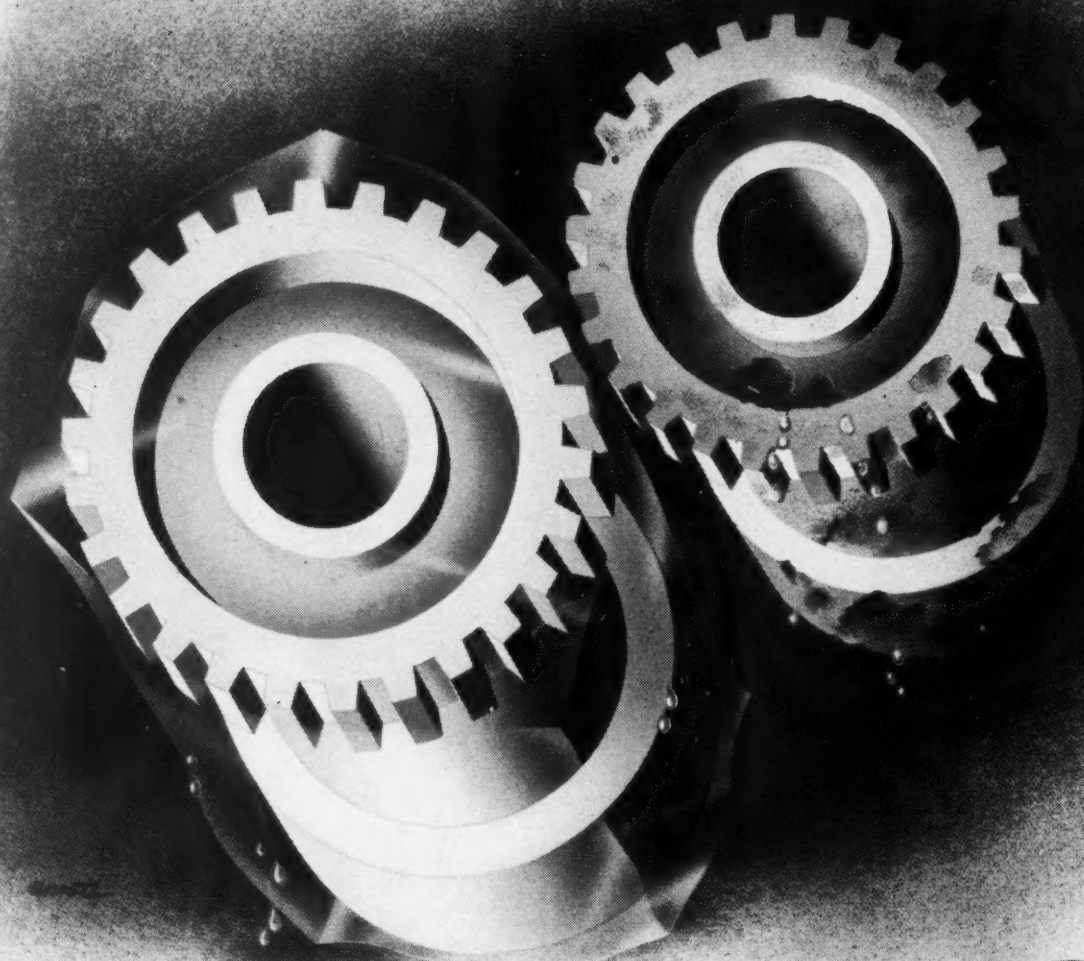


IVERS • LEE COMPANY • NEWARK • N • J

*Sanitape-Sealtite is a unique method for packaging pills, tablets, capsules, creams and powders, by which each unit or unit dose is sealed in its own airtight compartment — assuring convenience, protection and maintained efficacy.

PACKAGES, METHODS AND MACHINERY FULLY COVERED BY U. S. AND FOREIGN PATENTS.

FOR PACKAGED PRODUCTS — A NEW PROTECTION FROM CORROSION



Moisture meets its master

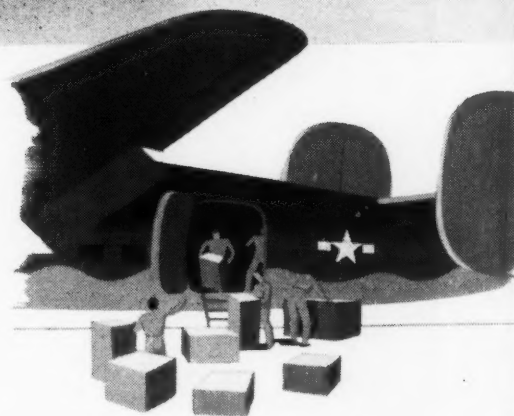
Saran Film, a new packaging material developed by Dow, moisture meets its master. It keeps this common cause of rust and corrosion in its place to a greater degree than any other comparable product.

Packaging engineers, developers of a new science of packaging goods for shipment abroad, now insert machine guns and metal parts in flexible envelopes of Saran Film. These are the inner membranes of

sturdy packages, built up of various other materials. In this instance, the main function of Saran Film is to exclude moisture; the outer package provides the strength. Packaging engineers are finding this new material so valuable that it is being acclaimed the packaging development of the year.

THE DOW CHEMICAL COMPANY
MIDLAND, MICHIGAN

New York • Cleveland • Chicago • St. Louis • Houston
San Francisco • Los Angeles • Seattle



BUY MORE WAR BONDS

Saran film

KEEPS MOISTURE IN ITS PLACE

DOW

CHEMICALS INDISPENSABLE
TO INDUSTRY AND VICTORY

ORDNANCE WRAPS

GRADES A, B, C

CONFORMING TO FEDERAL SPECIFICATIONS 105-46 REVISION 1

★ GREASEPROOF

★ MOISTUREPROOF

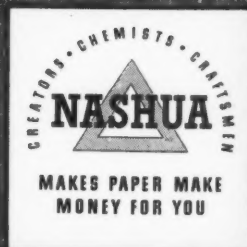
★ WATERPROOF

★ LAMINATED

WRITE FOR SAMPLES TO

**NASHUA GUMMED AND
COATED PAPER COMPANY**

NASHUA, NEW HAMPSHIRE

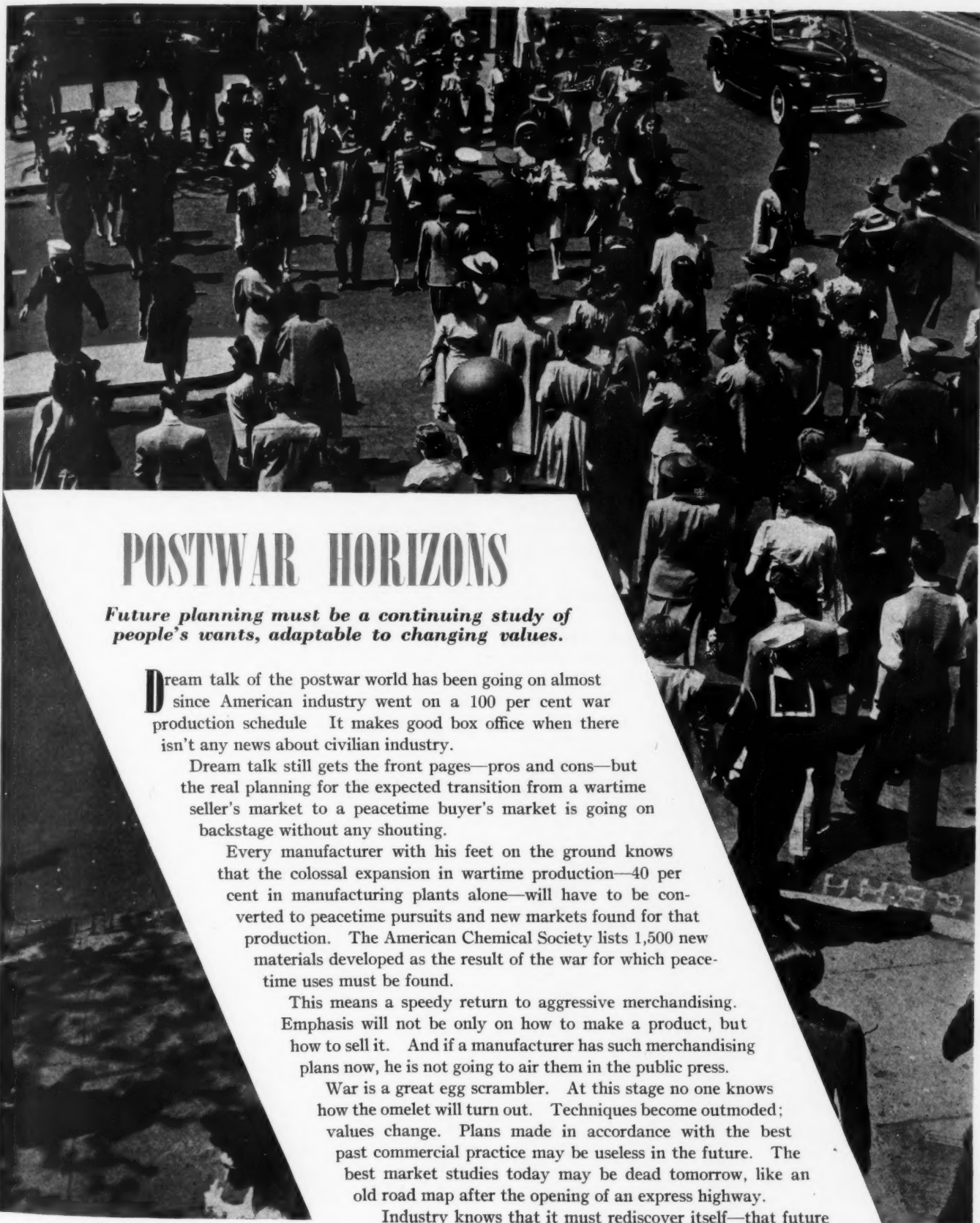


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POSTWAR HORIZONS

Future planning must be a continuing study of people's wants, adaptable to changing values.

Dream talk of the postwar world has been going on almost since American industry went on a 100 per cent war production schedule. It makes good box office when there isn't any news about civilian industry.

Dream talk still gets the front pages—pros and cons—but the real planning for the expected transition from a wartime seller's market to a peacetime buyer's market is going on backstage without any shouting.

Every manufacturer with his feet on the ground knows that the colossal expansion in wartime production—40 per cent in manufacturing plants alone—will have to be converted to peacetime pursuits and new markets found for that production. The American Chemical Society lists 1,500 new materials developed as the result of the war for which peacetime uses must be found.

This means a speedy return to aggressive merchandising. Emphasis will not be only on how to make a product, but how to sell it. And if a manufacturer has such merchandising plans now, he is not going to air them in the public press.

War is a great egg scrambler. At this stage no one knows how the omelet will turn out. Techniques become outmoded; values change. Plans made in accordance with the best past commercial practice may be useless in the future. The best market studies today may be dead tomorrow, like an old road map after the opening of an express highway.

Industry knows that it must rediscover itself—that future



What the future holds for air freight is indicated by the inauguration of "Cargo-liner" service by United Air Lines, October 16. Photo shows interior of Douglas DC3 planes, equipped with special cargo features, that will carry three tons in comparison with 1,400 lbs. in previous regular passenger-cargo liners. Shippers, container makers and air cargo representatives are already working on standard air-freight "specs."

planning must be a continuing study, geared to changing social, political and economic trends. Revealing indications of this in the packaging field are the questions received daily by MODERN PACKAGING's Reader Service Department. Thirty to 40 per cent of them run something like this:

"Can you give us the names of some good designers who can work on postwar toiletries packages?"

"Can you tell us about designers who can do a postwar job for an electrical appliance manufacturer—someone who knows construction and materials—not just design?"

"Do you have any information about whether women prefer jars or collapsible tubes? We are wondering whether to put our rubbing ointment in tubes after the war."

"Could you send us an extra copy of that article you ran on 'What Containers for the Sky Trains?' I'm spending all my time on corrugated containers for air cargo after the war."

"Have you any information on what can manufacturers are going to do to get back the metal container business?"

Every one of these inquiries is a part of the tremendous distribution problem to be solved after the war. Plentiful supplies of materials, released from war duty, will mean an abundance of mass-production goods to be sold in a highly competitive market.

Whenever such a condition exists, packaging becomes a forceful tool of industry to increase the sale of those goods. Since the invention of steam and electric power that made mass production possible, this has been true. Rural populations moved to the cities and the hoard of manufactures of soaps, foods and drinks produced to supply this increasing urban population had to be protected by packaging to carry them long distances through the channels of distribution from manufacturer to consumer. Competitive items had to rely on packaging with eye-appeal to build sales.

During the depression years of the thirties, when production was greater than consumption, packaging—eye appeal and

convenience packaging—was a leading merchandise aid to move goods. Transparent packaging raised protective and luxury packaging to unsurpassed heights. Everything was wrapped in cellophane from chewing gum to grand pianos. Any merchandiser who could possibly put his goods in a "see through" container had it on counters, in displays and windows, visible through its package. Self-service markets made it necessary to scream product identification in bolder and bolder letters. Under the guise of convenience came hundreds of artful dispensing features—some good and some so intricate it took an engineer to figure out how they worked. Plastics were just coming into their own as desired new materials by every packager who could use them.

PACKAGING GOES TO WAR

Then one Sunday afternoon came Mr. Tojo's bombs. One by one, the plastics, the foils, the cellophane, the metal, the bottle caps, the fancy papers, transformed into bombers, tanks and shells, went to war. Even the products that went into the packages went to war to equip, feed and clothe the armies and Allied Nations. More and more of them are going and will continue to go until the peace is signed.

Today, it is not a question of "What shall I use to package my goods?" but "What can I get to put it in." The consumer takes her purchases in whatever container she finds them. She doesn't complain. She's even conditioned not to expect her favorite brands. She takes butter and likes it no matter from what dairy. She takes coffee in a bag or a glass jar; tooth powder in a paper can if she doesn't have a used tube to exchange for a new tube of toothpaste.

That's not going to be true in the postwar. When store shelves are again plentiful with consumer goods, she's going to demand what she thinks will give the most for her money. Brands and packages she likes best she will select.

How much money the average American has to spend after the war depends upon how fast the wheels of civilian industry are put into motion, how fast civilian jobs are found for 11,000,000 men mustered out of service, how fast the billions of dollars worth of government-subsidized war plants are refinanced and converted to peacetime production, how fast new markets, either domestic or foreign, are found for the goods produced, and how fast the staggering tax burden can be lifted.

The Gloomy Gusses view all this with alarm and well they may. If there should be a lag in public confidence due to mass unemployment on top of taxes which must be paid after "Johnnie Comes Marching Home," it will have dire economic consequences. Sound business leaders know this must not happen. That is why such men are not putting on the asset side for V-Day the dream stuff like \$300 automobiles or weekend air cruises to Tahiti.

They are considering the civilian goods replacements that will be required—radios, refrigerators, automobiles, household appliances, kitchen wares, rubber goods, furniture, new houses—things no one could have during the war.

CONSUMER PREFERENCE

In its postwar consumer survey, the United States Chamber of Commerce estimates that 61 per cent of American families would make purchases of one or more major articles within six months after the war ends. What they would purchase is as follows: 3,675,000 families intend to buy automobiles; 2,625,000 families intend to buy refrigerators; 2,100,000, washing machines; 1,645,000, stoves; 1,400,000, vacuum cleaners; 2,555,000, radios; 1,505,000, electric irons. 6,500,000 families intend to buy home furnishings; 1,016,000 families intend to build or buy a new home.

Another example of this kind of fact finding is the questionnaire General Electric issued sometime ago to discover consumer preferences for styles of refrigerators, air conditioning, electric ranges, and other household equipment which this company makes.

Sound business leaders are figuring not so much on how many dollars the average person will have to spend, but on what mass production items can be sold for the least amount to the most people. It's a foregone conclusion that no matter what happens to the economic structure following the peace, there will be more people with five cents to spend daily than five dollars.

Competition for these nickels, dimes, quarters and dollars will be keen among the producers of popular priced packaged foods, drugs, confections, cosmetics, toiletries, tobaccos, household items and novelties on the counters and shelves of the nation's retail stores.

Once packaging supplies are off forbidden lists, there will be a mad scramble for convenient eye-appeal packages for such items to regain lost markets and to win new markets for new low-price items which have not yet basked under a neon sign.

Packaging will have to be what the consumer wants. It will not be what the boss decides is a fine design (see page 62). It will be what the millions of average Americans dictate. It will be sampled and pretested in selected areas in the same manner as advertising and other promotional activity. It will have to give better performance and protection. Eleven million men in service will have returned from a "packaged war." They have been made aware of the best packaging American industry and military authorities have been able to

devise from the time they eat a field ration breakfast until they light a cigarette from a weatherproof match case before taps. Their mothers, wives and sisters in war plants, too, will know good packaging because they have seen it used for the protection of every known kind of equipment, food, clothing and drug employed in modern global warfare.

LOWER DISTRIBUTION COSTS

Competition to give the average American shopper the most for his money will also mean more packaged goods to cut down distribution costs by less handling and longer shelf life. The chain and self-service stores claimed before the war that they had reduced prices to the consumer 10 per cent through group management methods of distribution. Part of this reduction in cost is due to the efficiency of unit-packed merchandise, which reduces handling, cost of stock taking, loss from spoilage and damage. Independent groups have had to form voluntary chains to meet this competition in lowered distribution costs. Postwar plans call for more of this.

Two large chain and mail order houses told MODERN PACKAGING they expect to prepack every possible item among the hundreds of thousands they carry. Right now they are looking for men who can make detailed studies of such procedure and present recommendations and specifications for materials, construction and performance of containers for everything from nail files to farm implements. Such studies will include data on arrangement of warehouses, stockrooms, bins, shelves, counters and windows for the accommodation of these prepacks. Further specifications will include informative data about packages for stock takers and sales forces, as well as consumer factors dealing with eye appeal, protection and convenience.

These mass-production outlets have observed the efficiency with which unit packs of all kinds have been handled by the armed forces and will adapt such efficiency methods to commercial packaging practice.

Are dehydrated foods here to stay or a war expediency?





What effect will refrigerator locker plants have on packaged frozen foods and the sale of flexible packaging films?

GETTING A FRESH START

The postwar period, whenever it comes, will have one advantage in giving everybody a fresh merchandising start. Shortages of packaging materials have reduced packaging to essentials. Of necessity, simplicity has been the rule of the day. Many "gosh-awfuls" that grew because everyone was trying to outdo the other fellow have disappeared. They slowed production. Consider some of the prewar fancy bottles for liquor and cosmetics—so ornate they had neither beauty to look at nor proportion to keep them from tipping over. Mold simplification programs to increase production have eliminated such extravaganzas. When the time comes again for custom molds, designers will have a fresh opportunity to make something in good taste.

Package material and product shortages have also given many companies an opportunity to get rid of the weak sisters—non-profit items that were carried along because the boss was afraid to scrap them.

POSTWAR PACKAGING MATERIALS

Every device of packaging development will be at hand to assist the manufacturer to package his products well after the war.

There is much conjecture about the competition between various packaging materials themselves in the future. Will the can manufacturers regain the business they have lost? Will the companies who converted to glass and paper for the duration reconvert to metal? Generally speaking, materials will seek their own levels, depending on functional properties and cost factors, and this will be a good time for packagers to consider all types of materials in relation to their own products.

Obviously, some products will stay in wartime containers

that were found satisfactory. If the alternates were not so convenient on all scores, then the products will drift back to their superior prewar packages or into new materials that will be available. In this issue is an article about the development of blown thermoplastics. Containers of such materials may compete with glass, if production problems and cost factors can be worked out.

For some purposes, metal will be sought as soon as it can be had. Consumer products out for the duration may come back quickly in metal containers. Can production, now used for army foods, will return to can production to feed the boys who have returned home and the starving millions throughout the world. Canned beer will again compete with bottled beer, and so on.

Tin may be used in direct proportion to the supply, depending upon trade arrangements with Far East mines, the amount of tin that can be extracted and refined from Bolivian mines and the quantity that will be required for tinplate. The tin scarcity has developed electrolytic methods of applying tin in place of dipping. This requires very little tin for a great many container uses. If little tin is available, this process will be used widely. From the laboratories also come reports of new synthetic coatings for metal containers that will make tin unnecessary.

There has been no satisfactory wartime substitute for the metal collapsible tube. These containers should regain wide usage after the war, unless plastics, released from war duty, give them a run for their money. It is said that efficient collapsible tubes can be made from certain plastics. If that is true, it should make future exciting packaging news.

Paper container manufacturers who have gone in heavily for wartime business do not seem worried about retaining such business after the war. Companies that have made paper closures, compacts and containers for powders have not overexpanded facilities in this direction, except to take up slack in others. There was no opportunity to expand too far, because government restrictions prevented obtaining mechanical equipment. When the war is over these companies expect to go on full-time production of containers for candies, cigarettes, toiletries, luxury goods and decorative set-up boxes for other lines which have been out since Pearl Harbor.

There will probably be tough competition ahead for companies who made paper containers with special liners and laminations for motor oil, paints and other liquid and dry products. Millions of dollars have been spent on these experiments. Several oil companies have adopted such containers as alternates for the quart oil can. Whether they will continue using these when metal comes back depends upon whether the alternate container can compete on all scores—structure, protection, price and quantity production. Many are of the belief that it cannot.

The multiwall paper bag with its many-purpose combinations of plies is now used for 300 products. Fifty per cent of these uses are new ones since the beginning of the war. Even if some of these users should return to metal drums, the multiwall bag manufacturers say regained business for building materials when civilian construction is resumed will keep multiwall bag manufacture at a high level, even though military uses are curtailed. They also point out that no user of multiwall bags has ever returned to a former type of container.

Automatic glass making machinery has been kept in operation so steadily to supply war and civilian demands that glass container manufacturers would welcome a relaxation in production schedules. Glass plants are geared to run at

Will prefabricated houses mean more small package units and more prepared foods in packages that can be opened and contents served with no muss or fuss?



approximately 85 per cent of capacity normally. At present they are running close to 100 per cent turning out only standard molds permitted by the government. This allows no opportunity for cooling the machines or changing to custom molds as in normal times. After the war, resumption of liquor and wine production, increases in sugar consumption and metal caps for carbonated beverages, a return of the 12-oz. beer bottle and many other small sizes ruled out for the duration, should provide glass suppliers with all the business they can handle comfortably. This will be in addition to large quantities of containers for foods, toiletries, cosmetics and drug products which will be on the upswing. Refinements in the technique of making strong, light-weight glass containers developed before the war will also place glass container makers in a good position to enlarge their market.

Many packagers will be eager to get their hands on the new flexible, waterproof material of laminated kraft, metal foil, asphalt and cellophane used for protective packaging of rations, medical supplies, dehydrated foods and many other war products. The efficiency of this material will have been tested on every battlefield of the world and it should have many applications in civilian packaging wherever waterproof and moistureproof qualities, prevention of infestation, space- and weight-saving factors are essential. The extent of its use will depend on cost. Today it is expensive. Because of its light weight, this material in bag, wrap or packet form should be an important item for air cargoes.

WHAT TO DO WITH ALUMINUM

Expanded production of aluminum for aircraft production will provide an abundance of this metal. Uses will have to be found to dispose of it. In the packaging field, it has many applications in the form of metal containers, dispensers, collapsible tubes and foil. It is excellent protection for foods and medicinals. Aluminum in the form of a coating on paper or as a foil is also a highly decorative packaging material. Technicians have perfected a process for imparting heat-sealing qualities to aluminum foil. They are also working to find a way of soldering aluminum so that it may be used in can manufacture.

Another serious blow to wartime packaging industry was the restriction of rubber. Since 1936, rubber hydrochloride sheeting (pliofilm) and other rubber derivative films became



PHOTOS, THE GOODYEAR TIRE AND RUBBER CO.

very useful aids in packaging for moisture protection. You may expect to see increased use of such films for the packaging of citrus fruits, cheese, meats, fish and vegetables. If natural rubber is unavailable, ways will be found to use synthetic rubbers for such purposes. Such films may be used for the wrapping of boneless meats. Army experience has shown that meats can be boned and shipped with no waste space or useless weight. They are more convenient for the consumer. Meat packers are giving serious consideration to such packing methods for the civilian market.

A world of new packaging materials will be available once plastics are out of military service. Nearly every company wants to know about plastic packaging after the war. And every packager who wants it and can use it should be able to get it, due to the tremendously increased facilities for producing plastic compounds.



Greater convenience, protection and eye-appeal are forecast by this corrugated postwar box for tomatoes.

Past experience in plastics packaging may be outmoded in view of the many improvements that have been made in the plastics industry since the beginning of the war. Comments from a leading user of plastic containers in the cosmetics field before the war, however, may give an idea of what is desired. This cosmetic house is looking right now for a man who can do technical research on plastic containers. They want a material which has color stability so that it will not fade or discolor on a store shelf. They want a material that is resistant to oils and greases, alcohol, moisture and water. They want one that is unbreakable and that will not contract or expand in ordinary temperatures to interfere with easy opening of closures. They prefer a translucent material to what they call the "cold transparency of methyl methacrylate." They want a material that will not "bleed" (color escaping into contents of the package or plastic absorbing color from the product contained). All of these problems they encountered in prewar experience. They feel they went into plastics a little too early in the game. When they plunge again, the situation will be different. The applications of plastics in the war have been so numerous that years of progress have been telescoped into a short space of time. Prospective users of plastics for packaging may look forward to stable materials that will have every advantage of protection and esthetic appeal.

There is considerable talk, too, of flexible plastic films in packaging after the war. Among these materials, watch for developments in Saran (polyvinylidene chloride) already used as a moistureproof ordnance wrapping. Nylon publicity also indicates that there will be packaging news in this field of research—not only a molded plastic but a film which looks promising for a flexible vacuum pack. Also polyvinyl alcohol has been made in the form of a film and styrene has been extruded in sheet form. Packagers may also look forward to further improvements in cellulosic plastics, both acetates and ethyl cellulose.

CONVENIENCE AND DISPENSERS

"About the most convenient package in my kitchen is a salt container with a pouring spout," said a woman the other day. "I wish they would make a lot of packages that way. Coffee packages, for instance, would be fine with some kind of pouring device."

Such a chance remark should not be taken lightly. Multiplied a few hundred fold, it represents a consumer preference which the wise merchandiser will study now as a case in point for the competitive markets he must court after the war.

There are many obvious examples of inconvenient packages. Why they haven't been changed long ago is inconceivable. The bottles that are too high for the average bathroom shelf or on the average refrigerator shelf, for instance. One woman MODERN PACKAGING interviewed mentioned a drug product she liked, but never buys because it won't fit on her bathroom shelf. There are olive bottles so tall and skinny they topple over at the slightest touch and have mouths so small that you can't get the olives out. There are friction tops on paint cans you can scarcely remove without spilling the paint. Opening of cans could be made easier by the use of more key-opening devices like those on coffee cans. Another woman said she preferred dehydrated soups in packets, because she hated to open cans. Dispensing features on folding cartons for soap flakes and cereals need further improvements. Caps and closures should be made so they aren't so hard to open the first time and yet be tamperproof. These examples are by no means all. They are presented merely as suggestions of how a better package may help to increase the sale of goods.

CHANGES IN WAYS OF LIVING

Every major cataclysm in history changes modes of living. After a great war, something has to be done with the scientific progress born of necessity. In the peace that follows this war among the things most talked of that may have a bearing on the package are: prefabricated houses, refrigerator locker systems, dehydration, electronics and all that they imply including television, air freight and foreign markets.

Advocates of the prefabricated house predict a shifting America, which can follow the sun, jobs, or simply whims. They envision postwar homes assembled and produced with assembly line methods—delivered with furniture, fittings and everything else except tableware, dishes and bedclothing for about \$2,000, moved from place to place on trucks.

These tiny houses will influence the size of the package. There will not be sufficient storage space for large packages. There will be small space for baking and canning, which indicates a future need for more prepared foods in packages that can be opened and served with little fuss or muss.

E. W. Williams, editor of *Quick Frozen Foods and The Locker Plant* estimates that there are today more than one and a half million refrigerator locker renters, each representing a family of an average of 3.8, making close to six million people dependent upon locker services. Twenty or more large refrigeration companies have developed home and farm storage freezer units priced from \$99.50 for a 3 to 4 cubic foot home unit to \$700 to \$800 for a 15 to 17 cubic foot farm unit. Some refrigerator manufacturers are also planning frozen food storage units in the home refrigerator of the future. As soon as such units are released for civilian sale, these companies will go after this business aggressively.

A corollary to this business is the sale of flexible packaging films of cellophane, and after the war, pliofilm, perhaps Saran and Nylon, for home-packed frozen foods. Six million people wrapping food and storing it in a locker plant means a market for packaging materials to everybody in a city the size of greater New York. It means educational programs to teach them how to use these packaging materials, how to do home heat sealing. It also cuts down by that much the market

for the sale of commercially packed canned and frozen foods. The latter, however, will have opportunity for increased sales to consumers who will have larger storage compartments in their home refrigerators.

Competition in the use of packaging materials will be affected by the future of dehydrated foods. If they are here to stay, it may mean a great deal more flexible packaging materials competing with metal and glass for other types of processed foods.

Lewis W. Waters, vice-president of scientific relations for General Foods Corp., believes, "Certain dehydrated foods like baked beans, mashed potatoes and many others are almost certain to stay after the war."

Postwar planning of The Borden Co. includes placing on the market a number of dehydrated soups and dehydrated coffee. Borden introduced dried milk in 1904 and today claims the world's largest dried milk business.

Nearly all large food processing companies today have considerable investment in dehydrating plants. The government has large sums in dehydrating operations. Whether these continue after the war will depend upon popular acceptance of dehydrated foods.

Today, dehydration is essential to save shipping space. Will this be as important a factor when the railroads and shipping lines are looking for business?

There will, in any case, be an important place for the distribution of dehydrated foods in areas where certain foods cannot be produced. Before the war, American processors of dried milk found excellent markets in Venezuela where there is no dairy farming. It is conceivable that other dehydrated products can be similarly marketed. Dehydrated foods will have a special market for summer camps, hunting trips, etc., where they can be easily stored and carried.

When television arrives, it may have a marked effect on package design. If programs are sponsored, advertisers will have a new medium by which to show their package. Will old packages appear right for color and visibility of trademark and product identity? If they do not, there may well be many redesigns. On the other hand, sponsors may prepare dummy packages for the telecast plugs. So far, it is believed that most telecast plugs will be photographed on motion picture film for re-use. If that method is used, colors could be faked on dummies to produce the appearance of the real package on the television screen.

Many people, who do not read, listen to the radio. They are influenced to buy what they hear about over the air. In a telecast, the non-readers would receive a visualization of the package in addition to hearing about it. Foreign populations who do not understand English, are not influenced by radio commercials. In a telecast, they would see the package. The package design or color treatment would have to be presented with memory value for them.

All these ideas are pure theory, because before any sponsor will consider television, difficulties of station wave lengths must be ironed out with the Federal Communications Commission and enough low-priced sets must be sold to provide an audience large enough to attract the prospective sponsor.

More than \$20,000,000,000 were spent for cargo and combat planes in the United States in 1943, nearly five times as much as was ever invested by the automobile industry in any one year. One of the most important factors in the economical use of the airplane as a cargo carrier after the war will be light-weight packaging. (MODERN PACKAGING, September 1943, page 47.) Other factors such as pressures

and temperatures at high altitudes as they affect packaging materials will be important considerations.

Another much-talked of subject these days is export packaging in the postwar era. In the past, American companies have been heartily disliked in foreign countries because of the manner in which they shipped their goods to foreign purchasers. Products which went to the tropics were not protected properly to withstand tropical temperatures or humidity. The goods was spoiled by the time it arrived. Conversely, shipments were made to cold climates without any thought of what effect low temperatures would have on packaging materials and contents. When the first Lend-Lease shipments went to China, 90 per cent of the damage was caused by corrosion. If there is one thing this country will have learned from global warfare it will have been how to pack for every climate of the earth and every known means of transportation. Such experience applied to peacetime export should be a good-will builder for American goods everywhere in the world.

SUMMARY

In so far as it affects the distribution of the world's goods packaging is affected by changing economic, social and political patterns. Among the important trends that every packager should begin looking for now in the light of his own product after the war are:

1. Speedy return to aggressive merchandising.
2. Continuing technical and market research.
3. Packaging as a tool to increase the sale of goods.
4. Emphasis on mass-production items that will give the consumer the most for her dollar.
5. Consumer preferences in package performance, eye appeal, convenience.
6. Ways to cut distribution costs by more efficient packaging methods.
7. Packaging materials that will do the best job for each particular product.
8. Cooperation between users and suppliers to make the most of new materials that can be adapted for packaging after the war.
9. Adaptation of packaging to changing modes of living.
10. Study of foreign markets and packages that will build good will in those markets.

Packages appear in an early NBC telecast. Will your package have to be changed if you use television?



Conversion time: 30 minutes

How a little mechanical ingenuity enables one packager to maintain both military and civilian output on a single bottling line.

Conversion and reconversion of a bottling line, from Army chigger chaser to home-front liniment and back again, is accomplished with such ease and rapidity at one New Jersey plant that it seems almost like sleight-of-hand.

Yet weeks of skull practice and priceless quantities of American ingenuity made possible this slick-trick of packaging and there is in the story a lesson for every manufacturer who is interested in meeting his war contracts while at the same time keeping his civilian products on the market for the duration.

How well this manufacturer has succeeded in the double purpose is attested by visible evidence: (1) the Army-Navy "E" which flies over his plant and (2) the bottles of his liniment—of a time-honored American brand—which appear in virtually normal supply on the shelves of every corner drugstore.

It wasn't easy.

The liniment is traditionally packaged in a tall, thin, round, 2½-oz. bottle with normal ⅜-in. pouring aperture

1. Liniment bottle (left) and Army insect-repellent bottle, filled on the same bottling machine by means of a quick, simple changeover to a filler head especially designed for the Army bottle. Despite differences in size, shape and height of bottle, changeover is made in 30 minutes.



The reader will note that the name of the company concerned in this article is withheld—at their own request. This is of no consequence as far as the value of the story is concerned, but it makes all the more commendable their willingness to pass on to other packagers the benefits of their experiences. Inquiries are welcome if addressed through MODERN PACKAGING.

and a screw cap. The Army insect-repellent bottle also has a screw cap—but there the comparison ends. The Army bottle is rectangular; short, squat and stoop-shouldered; of 2-oz. capacity—and has a ⅜-in. "sprinkler" aperture.

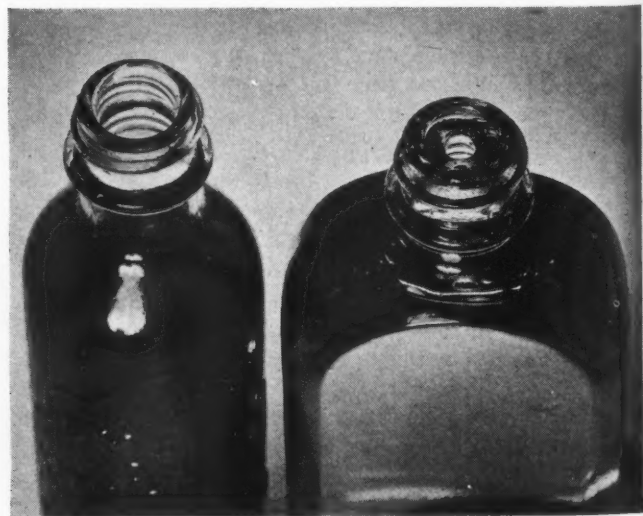
Before the war no one would have thought it possible to handle the two bottles on the same filling machine. Yet today—thanks to a few ingenious special fittings devised by the engineers of the packager and the machine manufacturer—the bottles in the line are completely interchangeable within 30 minutes.

When a Quartermaster's order for insect repellent arrives, the bottling of liniment stops. Machinists shut off the liniment supply tank, make a quick change of the eight filler heads and a few other parts, hook up the supply of dimethyl phthalate, and—presto! the Army's chigger chaser is flowing off the line at the rate of 27,000 bottles in every eight-hour shift.

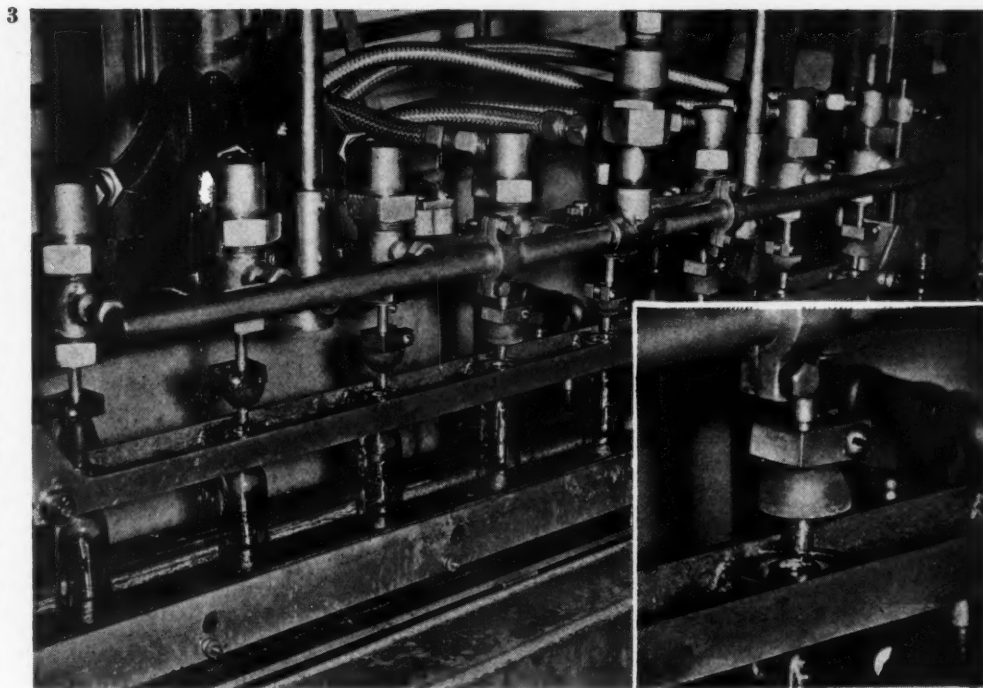
This quick-change has been made, back and forth, as often as four times in a month. And to date approximately 1,000,000 bottles of the insect repellent have been shipped to the Army—on or ahead of schedule.

Sketches and pictures show the difficulty that had to be surmounted because of the differences in the height, size and shape of the two bottle openings.

2. Liniment bottle (left) has a ⅜-in. aperture; Army repellent bottle (right) has ⅜-in. sprinkler opening.



3. Machine filling liniment bottles, with fillers in raised position. Inset: A close-up of single filler head, which ends in conventional double tube with filler spout surrounded by vacuum tube. 4. Filler heads are changed and in 30 minutes same machine is filling Army bottles. Spring-and-rubber filler spout reverses standard procedure, in that vacuum operates from inner, extended brass stem and filling is from surrounding tube in rubber cone which fits on bottle lip. 5. Diagram shows construction of filler head. Note flexible spring-tension mounting of vacuum tube, which minimizes breakage.



The filler spout on the standard filling machine, as used with the liniment bottle, is the customary brass tube-within-a-tube. The liquid pours through the inner tube and a vacuum operates through the surrounding outer tube. In filling, the familiar principle operates: The rigid double tube drops into the neck of the bottle, and when the liquid comes up to the end of the tube the vacuum is established and filling stops, with any excess liquid being drawn off by the vacuum.

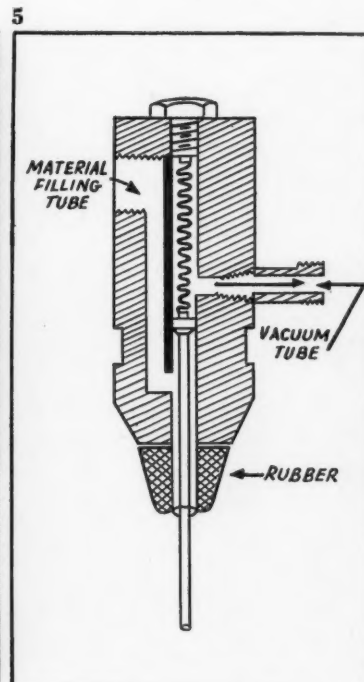
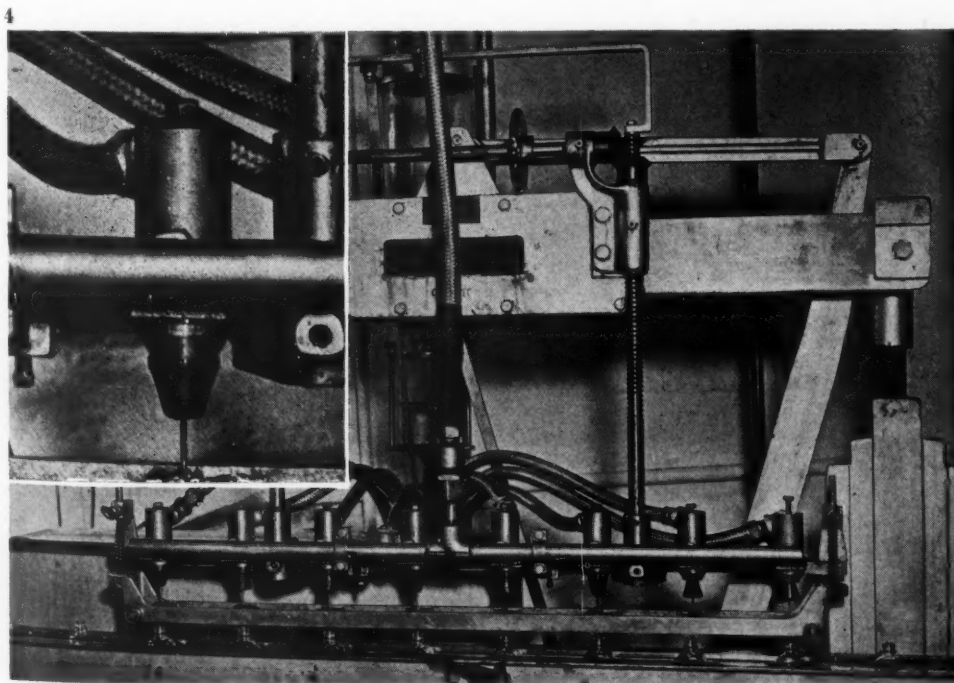
In attempting to adapt this machine to the shorter, smaller-aperture Army bottle, it was obviously necessary to increase the length and decrease the diameter of the filler tube. With the tube-within-a-tube design—which was the only feasible principle known—it was a difficult job to reduce diameter to the point where the tube would fit easily into the sprinkler top.

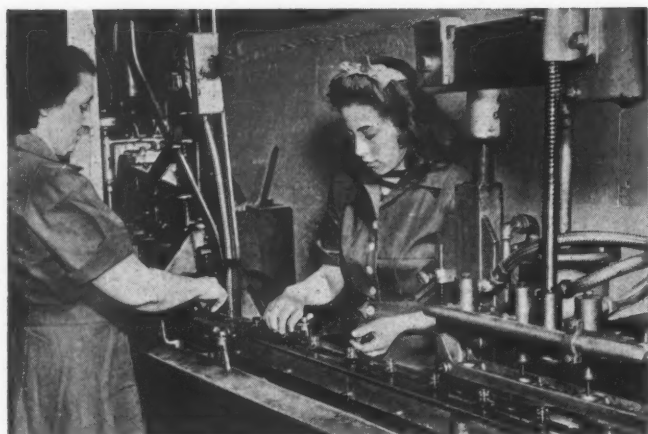
Nevertheless, a tube of the proper size was finally built

and tried out. It was not successful at first for the reason that there was excessive breakage of both tubes and bottles.

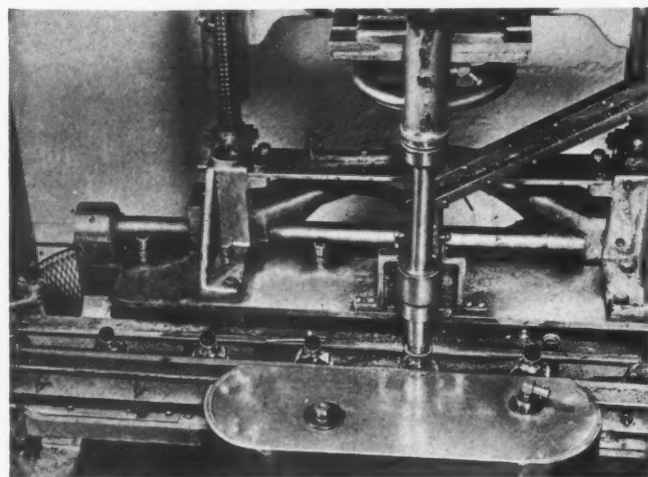
After further study and experimentation, a plant engineer came up with half the answer. He simply reversed the customary principle of filling, sending the liquid down through the outer tube and operating the vacuum through the small center tube. The principle appeared sound and it suggested a further step. He devised an entirely new base end of the filler head, whereby the opening through which the liquid flowed into the bottle would be in the base itself, with the center vacuum tube extending alone down into the bottle.

With a few minor adjustments, this radical conception worked. The filler-head base was made of rubber, in a conical shape, and it was made to come down snugly and seal against the thick, flat lip of the bottle. The circular





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6. Metal screw caps for Army bottles are started by hand. 7. Automatic chuck tightens caps as bottles pass down the line. 8. Removed from end of bottling line (off right), Army bottles are placed in belt conveyor. Crews of girls apply the paper labels by hand. Production by this system averages 27,000 bottles each eight-hour shift in this plant.

filler opening, then, was just slightly smaller in circumference than the bottle opening, so that the liquid flowed readily in at the top of the bottle without leakage. It was further possible, with this design, to make the extended brass vacuum tube of heavier gauge—to reduce breakage of the tube—and still small enough to slip easily into the bottle.

When the new filler attachment was installed and tried out on the bottling line, the bottles filled perfectly. The repellent liquid flowed in smoothly from the top and when the level had come up to the end of the single vacuum tube, the vacuum went into operation and halted filling.

There appeared only one further difficulty. The long, rigid vacuum tube still had a tendency to break bottles, and breakage of the tube itself, although reduced, was still troublesome. And whenever a tube shattered, it meant a shutdown of the entire bottling line for a costly 10 or 15 minutes while a new tube was installed.

This second half of the problem was solved by an engineer representing the manufacturers of the filling machine, who had been observing the entire proceeding.

The difficulty, it appeared to him, was in the rigidity of the vacuum tube. If there were only a way to put some flexibility in the tube, the breakage at this point might be eliminated.

He went back to his drawing board and shortly produced a sketch of the radically different filler head which is now in use. (Figure 5.) This makes use of a light spring, installed

through the top of the head, to put tension on the vacuum tube. Thus, instead of being held rigidly in place, the tube is allowed to spring upward an inch or more if it strikes the lip of the bottle and, through the flexibility of the rubber filler-head base in which it fits, it will also yield considerably from side to side.

Furthermore, if a vacuum tube does occasionally break, it is necessary only to unscrew a nut-cap at the top of the filler head, remove the spring and tube, drop in a new tube, replace the spring and cap—and in 60 seconds the machine is operating again.

This is not the only example of time-saving ingenuity at this packaging plant.

To facilitate the frequent shifts from Army to civilian product, there is an unusual supply setup. Separate supply tanks are maintained near the bottle-filling machine for the liniment and the dimethyl phthalate and in the changeover it is a simple matter to shift the hookup of supply tubes—after, of course, the filling machine has been thoroughly flushed and washed.

The liniment is manufactured in the plant and is always readily available. The insect repellent, however, is manufactured outside and is brought in by truck in drums. To eliminate even the time required to unload the drums and move them through the plant to the supply tank, the production manager has devised an outside filling connection, whereby the drums of repellent are simply poured from the

truck directly into the supply tank, which is located in the basement.

Efficiency marks the bottling and packaging lines throughout the operation.

As the filled bottles of repellent move away from the filling spouts, girl workers put the metal screw caps in place and start them by hand, the bottles then moving under a chuck which tightens the caps mechanically. It was found that better production could be maintained with hand rather than machine application of the caps.

At the end of the bottling line, the bottles are shifted manually and laid flat on a belt conveyor which takes them past crews of girls who moisten labels, apply them by hand and wipe off excess moisture with a cloth. Here also, as long as plenty of female help was available, it was found that the hand operation was faster than machine labeling.

Returned to the conveyor, the labeled bottles are received by girls who drop them in place in segmented shipping cartons, previously prepared. The bottles travel 72 to a carton, in two layers, protected on all sides by Army-specification corrugated board.

Filled cartons move directly off the conveyor belt into a standard machine which closes and seals them. After appropriate markings, they are ready for shipment to the Army.

The final example of unusual resourcefulness in this plant is in the removal of the cartons from the plant and the manner in which they are speedily loaded into trucks.

Because the packaging department is on the second floor, considerable time was lost in moving finished cartons on a freight elevator down to the first floor and out to the truck-loading platform. In normal times, such delay would not have been serious, but with Army work piling up in a plant attempting to operate at utmost capacity, every lost minute became important.

The normal solution would have been the installation of a regular, mechanized carton conveyor within the plant. But in wartime such equipment was difficult if not impossible to obtain.

Searching the country, the plant's representatives found an old, motor-driven bag stacker abandoned on a scrap heap in Pennsylvania. A few measurements showed it would fit. They brought it back, overhauled it, raised it on steel beams to the proper height on the loading platform and broke a hole in the plant wall at the second-floor level to admit the upper end. The bag stacker had now become a reversible loader conveyor.

The device has been enclosed in a neat wooden housing and is now doing yeoman service carrying outgoing Army shipments from the packaging floor directly into trucks for shipment and, conversely, conveying incoming shipments from trucks directly into the plant.

Thus are precious wartime minutes saved.

Credit: Filling machine by Elgin Mfg. Co., Elgin, Ill.

9. At end of packaging line, girls slip bottles into segmented cartons for shipment to the Army. 10. Cartons are closed and sealed in a standard machine, and after appropriate marking they are ready for shipping. 11. An old bag stacker, found on a junk heap in Pennsylvania, was installed outside the plant as a motor-driven loader-conveyor, leading directly from the shipping room on the second floor into trucks at loading platform. Operating in either direction, it greatly facilitates both loading of Army shipments and unloading of supplies. Loader has since been enclosed in a wooden housing.



10



11





Future package design will be no guesswork

by Donald W. White*

"Not the boss and his secretary, but millions of American housewives will select the postwar packages," says Mr. White.

Being in on the ground floor of a major business trend can benefit every alert business organization.

Right now, when all business is searching out important trends that will affect postwar plans, the packaging field is confronted with a significant trend that started before the war—the trend toward a marketing approach to packaging.

The wartime upheaval in packaging as an integral part of advertising and merchandising interrupted the opportunity of applying marketing analysis to packaging. The same upheaval has emphasized the postwar need for pre-testing and post-testing package sales and merchandising values.

Everyone has seen the wartime scramble that resulted as manufacturers rushed to develop packages of non-critical materials. Wartime shortages in many lines that created abnormal consumer demand have meant that the development of new or changed packages could safely concern itself primarily with protecting the product with little or no attention to the merchandising and advertising values.

Distributors under war conditions can sell many products with little emphasis on display. The element of competitive pricing has been largely eliminated.

It is natural, therefore, that packaging during the war has been largely a question of materials and production methods.

That has been apparent in the nature of recent packaging discussions. These have had to do largely with substitute packaging materials and with such production factors as coefficients of moisture absorption, difficulties in vacuum packing and availability of various types of closures.

This has been all to the good. A world of information has been amassed during these war months on materials and production factors that will be invaluable in peacetime.

Equally important is the fact that many products have been

forced into wartime packages that would not have been considered before the war. Such products will have a clear field to stay in or move into the best packages possible when the war ends, freed from restraints and high costs ordinarily involved in making a major packaging change.

Fortunately too, considerable work had been done up to the time of Pearl Harbor in tackling packaging as a marketing, rather than as a personal-taste or aesthetic problem—considerable that is, in terms of good basic jobs done by a few of the large manufacturers of metal, glass, paper, plastic and transparent sheet packaging materials, but relatively little in terms of percentage of the total potential of consumer goods to be packaged.

In any case, enough had been done to indicate a trend in the direction of pre-testing new packages and analyzing the sales elements of old packages by market research methods.

Parallel with this are other trends that make such testing by approved marketing methods increasingly important as we move toward peace. Just a few of them that started before Pearl Harbor and that have been speeded by the war will have more and more effect on packaging as an element in merchandising and advertising.

Three of these more important trends include: (1) Lower costs of distribution. (2) More informative selling. (3) More complete self-service selling of more lines of consumer goods. Each of these has a direct bearing on selection of package materials, selection of labels and design, and the planning of merchandising and advertising.

As these basic factors in distribution gain further momentum, the treatment of packaging as a marketing problem will be more pronounced. There will be a disappearance of the old rule-of-thumb method of having an artist bat out some sketches for a label or package and then use one for millions of packages if "it passed the boss and his secretary."

* Research Division, McCall Corp.

One of the large mail order houses, for example, plans to have every item in its retail stores, wherever possible, packaged after the war. Nails, screws, gadgets, tools, accessories and larger items will be wrapped, boxed, bottled, canned, fastened to cards, labelled, or what have you, in such way to

One of the soap companies, through its advertising agency,



63

is applying market research techniques to the packaging of its cake and flake soaps, but the findings are not available.

The new packages for one line of cosmetics are based on marketing research and there you get some data.

Between 50 and 60 sketches were submitted to a carefully selected sample of approximately 1,000 women. This group of consumer interviews lopped off all but 5 or 6 possible designs. Actual dummy packages of these 5 or 6 remaining designs were made up and shown to several thousand women for a final choice. The company is "very happy" about the sales results and indications are that this package line may carry through successfully after peace returns.

Actual testing of the packaging of some new products to be released when peace comes will have to wait for comparative data on available packaging materials after the war. Because the packaging of new products presents a more complex marketing problem, detailed plans worked out now should be an economy of time and money.

Factors to be considered in such new-product packaging include not only consumer preference, but dealer preference of materials for storage, handling, display and pricing.

One of the most striking evidences of the influence of packaging on pricing and display was indicated in a limited test analysis of sales of glass-packed foods made by McCall's Magazine just after Pearl Harbor, early in 1942.

Aided by the close relationship with supermarket operators, resulting from McCall's Meal Planner Service for large, combination, self-service food and grocery markets, this limited test was made to evaluate some of the factors involved in competitive pricing and display of glass-packed foods under actual working conditions in supermarkets.

The principal value of this study lies in the fact that it is a signpost or roadmarker showing which way to go. There would be no point in detailing the actual results of this study



4 and 5. The design of these cereal packages was dictated by self-service selling requirements. Will there be more of this for the markets of the future?

now. The figures gathered then could not possibly establish hard and fast conclusions applicable today, for marketing conditions as they existed in January 1942 may not be at all typical of the postwar period. From this study, however, may be derived a blueprint which any manufacturer may use in plotting his own course. Concretely, the things that he would want to determine would fall into two classifications: first, consumer reactions and second, merchandising factors.

Under consumer reactions, he would want to learn, for instance, whether women feel that glass-packed food items generally are more desirable. He would want to know if they think there is a real advantage in seeing what they buy. He would want to know if they are willing to spend "a little extra" for glass-packed foods.

Under merchandising factors, the manufacturer would need to determine whether his particular products could be sold successfully, in volume, at a higher price than competing products in other types of containers. For his glass-packed foods, he would have to determine "the zone of reasonable pricing" in relation to volume sales and to the same or similar foods in other types of packages. He would also try to learn whether this "zone of reasonable pricing" were applicable to all glassed food items or whether such pricing must be determined for each individual item. He would be very much concerned with the types of merchandise displays most effective in moving glassed foods in volume, particularly whether such display should be in combination with similar display of the same foods in other containers, or whether separate groupings of glassed foods should be displayed. He would try to learn what happens to sales of canned foods when the same foods are displayed simultaneously in glass.

From the point of view of the designer, the container manufacturer and the manufacturer of packaged consumer goods, it would appear that this type of approach should prove invaluable in getting up-to-date and conclusive answers to each of the questions raised in this type of test study.

On the basis of the vast consumer goods packaging job ahead during the postwar period and the relative dearth of valid data now available, it can be said that market research has barely scratched the surface in the field of packaging.

It seems safe to predict, therefore, that more extensive and better marketing research in the field of packaging not only offers big sales, merchandising and advertising opportunities, but represents the top trend in postwar package planning.

Plastic bottles?

Postwar release of styrene will make possible large-scale production by new blowing method.

New methods for the blowing of various thermoplastic materials have reached a state of development such that the packaging engineer must give serious attention to the possibility that the plastic bottle will arrive commercially in the immediate postwar period.

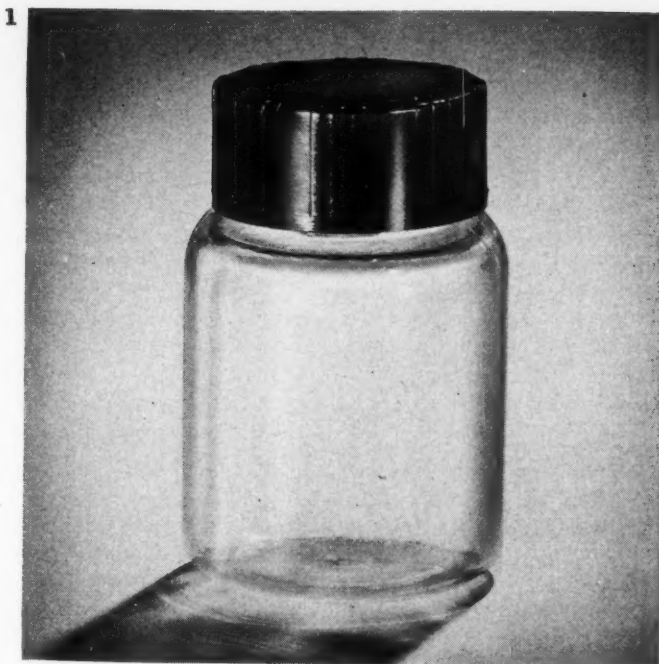
Herewith is the first published picture of a successful blown plastic bottle, formed complete with a screw-thread neck and capped with an ordinary phenolic closure.

This bottle is made of polystyrene, a material which at present is under strictest war allocation. The plastic bottle definitely will not be commercially available for civilian use for the duration, but there appears to be nothing in the way of its commercial production on a tremendous scale immediately after the war.

These are the facts:

The plastic bottle is far past the laboratory stage. The blowing method has made its production feasible and it is being produced. Shortage of material forbids any large expansion of production at this time, but the War Department is so impressed with certain advantages of the plastic bottle that it has specified it to replace glass in certain medical field kits—notwithstanding the critical demand for the raw material in other vital war uses.

The Office of the Rubber Director has stated that production of synthetic rubber in this country will reach 800,000 tons in 1944, of which approximately one-quarter will be Buna S, containing one-quarter styrene. It is generally assumed that a sizable portion of this large styrene capacity will be available for commercial plastics production after the war—and the law of economics would seem to dictate an appreciable price decrease for this material in the future.

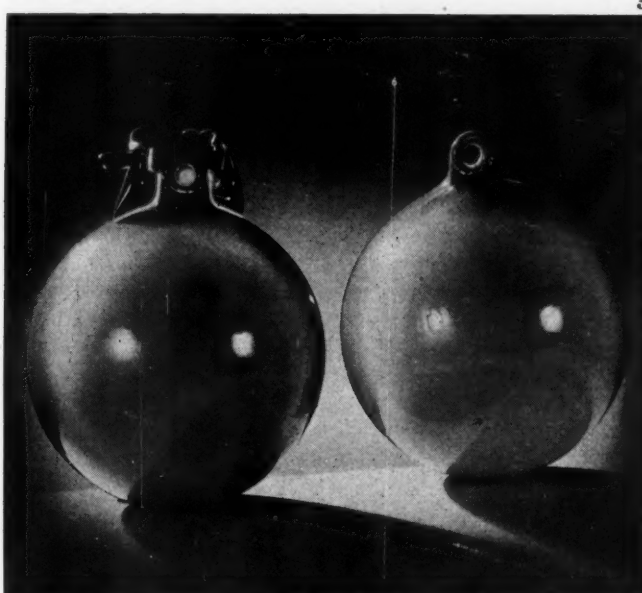
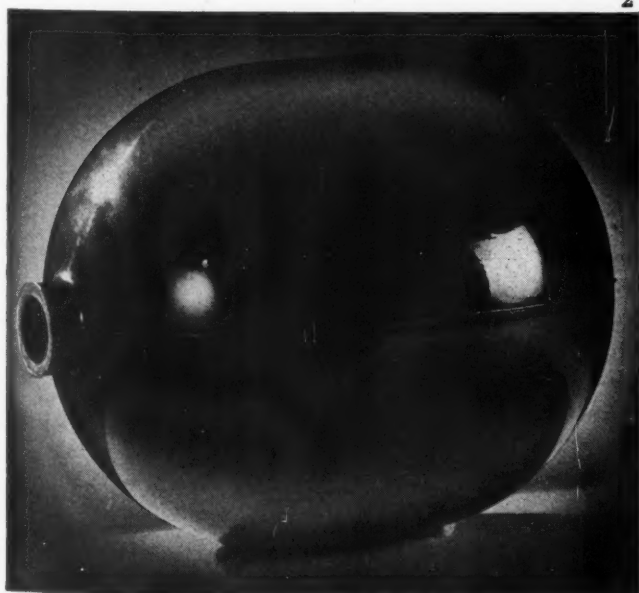


1. This is the first published picture of a successful plastic bottle produced, as is its glass counterpart, by blowing.

Cost of the plastics bottle in full-scale production remains to be accurately determined, but otherwise its advantages are obvious. Its impact strength is such that it is nearly unbreakable. And James D. Studley, chief of the Packing Section in the Office of the Surgeon General, told the recent Chicago convention of TAPPI that the plastic bottle which the Medical Corps has adopted will carry the same contents as will the glass bottle at a 20 per cent saving in cubage and a 75 per cent saving in weight.

"Only certain items can be bottled in plastics without undesired reactions," Mr. Studley said, "but to some extent these reactions can be obviated by the use of another plastic. Certainly the plastic bottle would seem to have possibilities

2. A forerunner of the plastic bottle is the one-piece toilet float ball of thermoplastic, which is extruded, blown and sealed with one automatic piece of molding equipment. 3. Early products of the blowing of thermoplastic included the Christmas tree ball, shown (left) as it comes from the mold and (right) with flash removed and hole punched through it for attaching wire so that it may be hung up.



wherever weight is to be saved. They will not break at ordinary temperatures and require little or no packing, therefore, or protection against breakage. It is possible, too, that they will hold the plastic cap better against loosening than does the glass bottle."

MODERN PLASTICS magazine in its October 1943 issue states that methods for the blowing of polystyrene and other thermoplastic materials have now been developed to a commercially feasible scale. The MODERN PLASTICS article describes the various principles and methods of blowing. Because of its importance to packaging, parts of the article and its accompanying diagrams are reproduced here.

One of the new developments is the use of extruded tube sections or preforms, fed in succession to a blow mold. This for the first time brings close to realization the construction of an automatic blowing machine which will turn out plastic bottles at a high rate of speed. Anyone at all familiar with the blowing of glass containers will have no difficulty envisioning a continuous automatic machine for applying heat and pressure to appropriate extruded plastic preforms.

"Particular notice should be taken," says the MODERN PLASTICS article, "of the internal surfaces of blown plastics, which have a lustre and smoothness seldom obtained where the plastic touches a metal cavity as it does in ordinary molding. Blow molds may be made of cast iron, aluminum, or other inexpensively worked materials, thereby allowing lettering and designs to be reproduced at low cost. The list of items which can be made by this method is being extended to include so many different things that the method's only limitation may be said to lie in the properties of the material selected and in the ingenuity of application. Experiments

show that most but not all plastics and synthetics appear amenable to treatment by blowing; consequently a suitable material can almost certainly be located for every use."

Following is MODERN PLASTICS' summary of plastic blowing methods:

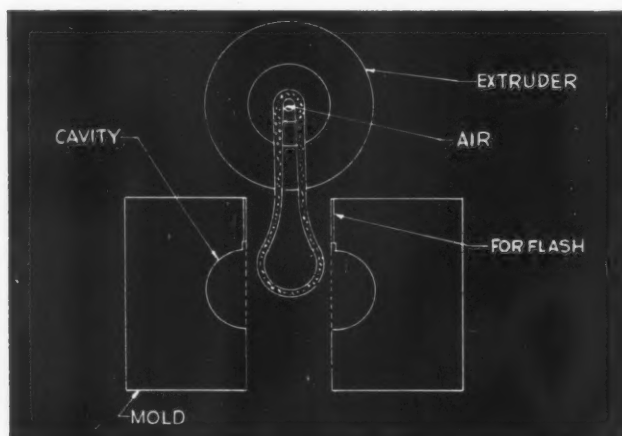
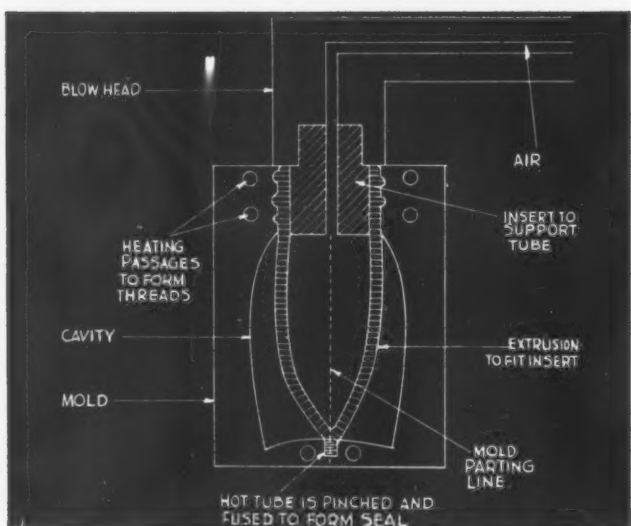
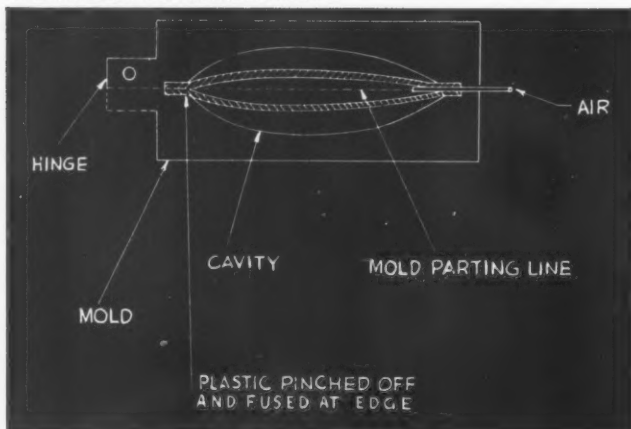
The first and oldest method of blowing plastics is the expansion of plastic sheets by the introduction of air or steam between the layers while they are clamped between the halves of a mold. This technique dates back to the early manufacture of hollow celluloid articles. References in plastic literature to this type of fabrication have been so cursory as to lead the reader to believe that the sheet method of forming plastics is either obsolete or unimportant.¹ Such is not the case. The sheet method of blowing is receiving a good deal of attention as a means of forming various types of bladders from rubbery synthetics. These products include basketball or football liners, hot water bottles, hollow baby toys, atomizer bulbs, etc. Since the average synthetic is processed somewhat differently than is natural rubber, the sheet blowing method may supplant procedures of manufacture which employ cementing or vulcanizing. Thus the number of operations necessary to produce hollow, collapsible items which use valved filling stems or suitable openings may be reduced.

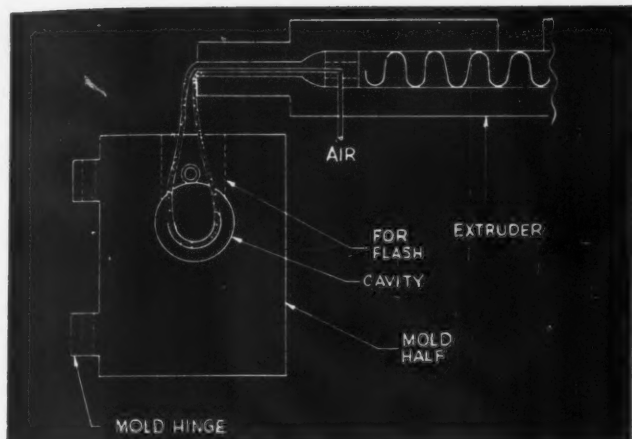
Figure 4 illustrates the forming of an oval bag by the sheet blowing procedure. Here the sheets, pictured as partially expanded by internal pressure, are clamped between the mold halves where pressure and heat nip and fuse the edges. When thermosetting materials are formed by this method, the temperature of the molds is raised and higher temperature steam is used for blowing. It is not the purpose of this article to elaborate on such a conventional and established process, but to indicate to prospective users at least 3 new methods for forming hollow plastic articles which soon may be available on a wide scale.

The first of these methods consists of the use of an extruded tube in place of the conventional sheet. The section of tube is softened and placed between 2 halves of a mold. Steam or some other suitable heating medium is introduced under pressure through a metal insert which is placed in the upper end of the tube to support it while the threads or finish of the article are being molded. This pressure forces the plastic to expand and, when it is evenly heated, to take the shape of the finished mold. As the mold closes, the bottom of the mold clamps the lower end of the tube thereby pre-

¹ "Plastic Molding" by Rahm, McGraw-Hill, 4, 7, 14 (1933). "Plastics in Engineering" by Delmonte, Penton, 283, 268 (1942). "Plastics" by Du Bois, American Tech. Soc., 67 (1943). "Handbook of Plastics" by Simonds, D. Van Nostrand, 311, 574, 957 (1943).

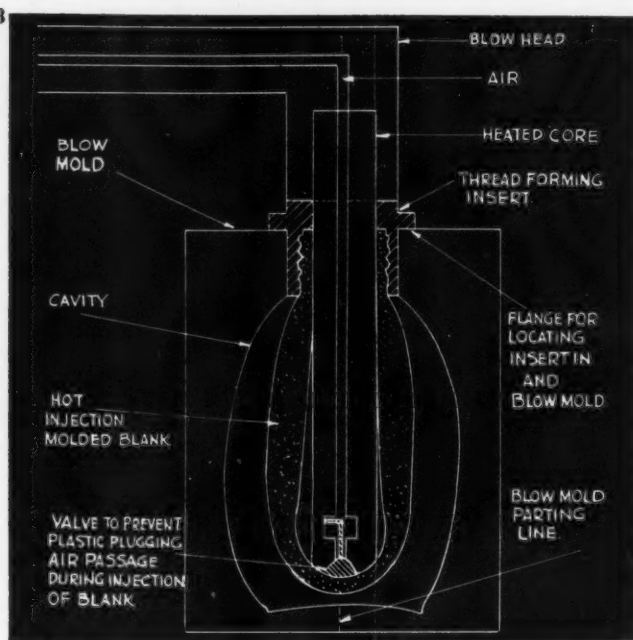
ALL DRAWINGS, COURTESY OWENS-ILLINOIS GLASS CO.





7

4. Sheet blowing method, with sheets clamped between two halves of mold. 5. Extruded preform method, showing bottom of tube clamped by mold. 6. The blown extrusion method, showing how gob is suspended in mold. 7. Blown extrusion before full size is reached. 8. Preform blank suspended in mold.



8

venting the escape of pressure. This clamping action not only helps form a tight weld at the end of the tube but also nips off any unused portion so as to produce a smooth internal and external finish.

Figure 5 outlines the use of the extruded preform method and shows the tube in the mold ready for blowing. Threads are produced as the mold closes around the insert. The bottom of the container is formed by pinching the hot sides of the tube together. Hot fluid or steam thus may expand the preform or tube to final shape.

The second modern method of blowing thermoplastics to receive extended development during the past year is somewhat related to the extruded tube process already described. At present, this process seems better adapted to the forming of hollow closed articles such as decorative Christmas tree balls, floating toys and toilet ball floats, since a finishing operation would seem to be required if screw thread containers were blown by this method. This process is believed to utilize an extruder wherein the plastic is softened and prepared for molding. As the plastic is extruded, air is introduced. Since the end of this softened plastic tube has been collapsed and sealed in the forming of the previous piece, the extrusion begins to swell. At this point, an open mold carried on a rotary table presents itself to the expanding extrusion and closes upon it. The blown plastic is nipped off, and the rotary table moves on one station. After forming, the hollow article is expelled from the mold when it finally opens at the discharging station. The details of this process and of the mechanism employed are zealously guarded secrets. However, some of its benefits already are being given to the public. The careful observer will recognize items made in this manner which are now finding their way into current trade channels.²

The extrusion method of forming hollow plastic objects is indicated in Figs. 6 and 7. In these diagrams the expanding extrusion is about to be seized by the mold. Since the process functions at comparatively high speed, air is introduced into the material stream in relatively large volume causing the bubble shown in the sketches to fill rapidly and stretch the

plastic to the desired wall thickness before the closing of the mold nips off the material stream.

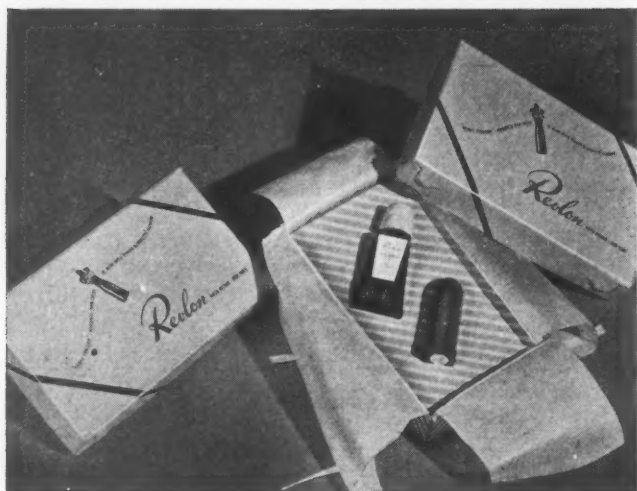
It is but a step from the above method to an adaptation of the ribbon process used in the manufacture of glass light bulbs. The inventive engineer can easily envision a process in which a stream of extruded plastic flows into a series of continuously moving molds and where a blow head comes down and expands the plastic ribbon as it begins to fall into the mold so that it fills the cavity evenly. It is the adaptation and perfection of processes such as this that offer prospects for fruitful research into the new uses of plastics.

The third type of plastic blowing upon which considerable research has been carried out during the past year involves the expansion of injection molded blanks while they still retain the injection heat. In this method a blank is injected into a hot mold (heated to about 325° F.) around a heated hollow core or insert. After injection the blank, or hot lump of plastic, is removed from the injection machine and placed in a cold mold. Air at around 80 lb. pressure is introduced through the hollow core, and the plastic is expanded to take the shape of the blow mold. If temperature conditions are scientifically controlled it has been found possible by this method to readily produce hollow articles of almost any description. The finish or thread is formed at the time of injection through use of a threaded collar which also supports the blank during blowing. This collar is later removed.

The blowing of the hot injection molded blank or preform to make an unbreakable plastic container is outlined in Fig. 8. The hot blank together with the finish or thread-forming insert is placed in the blow mold ready for the air pressure to be turned on. This air which enters through the hollow shaft forces the plastic outward from the core to form an even-walled section over the interior surface of the blow mold.

Undoubtedly the future will see an automatic machine for injecting the blank, clipping off the runner, transferring the preform to a blow mold and ejecting the finished article. This blowing method opens many possibilities for new uses of plastics which could not be attempted in the past without molding the parts in halves and cementing them together with the attendant expensive problems of fixtures, buffing, handling, etc.

² "A Blowing Process for Thermoplastics," MODERN PLASTICS 20, 46 (Dec. 1942).



Squaring the circle

Square powder boxes may be the order of the day before the war is over as indicated by this new container selected by Revlon for "Wind-Milled" face powder. This product is a newcomer to the Revlon family.

When the company planned the package, they decided upon the square box for two reasons. First, such boxes are more readily obtainable these days because more companies have facilities for making square boxes than round. Thus, supplies may be bought from several sources. Revlon is already getting these boxes from six different manufacturers. Second, square boxes conserve shipping space since there is no waste space between the boxes, when they are loaded into shipping cases.

The new item comes in a pale gray box with red lettering. A white windmill, flanked on either side by pink and white puffs, cleverly emphasizes the name of the powder. Another novel touch is a speckled powder path of pink and white leading right up to the little red door of the windmill, suggesting the color blending of the powder.

A miniature couturier box, complete to the details of tissue paper inner wrappings and tie tapes, contains the new Revlon nail enamel and lipstick ensemble, Bright Forecast. A die-cut, candy-striped platform holds the items.

Chartreuse is the basic color of the box and the platform. Cater-cornered bands in red simulate outer tie-strings. A sylph "finger silhouette" figure and Revlon Fifth Avenue appear in red also. An eye-catcher for gift counter display.

Quick change act

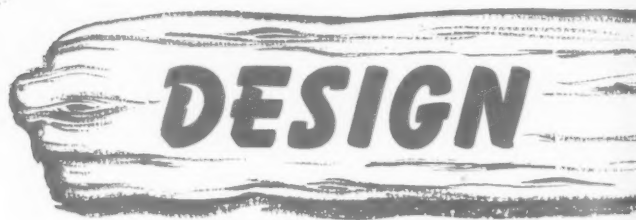
WPB restrictions on cellophane caused the Calco Chemical Division of the American Cyanamid Co., makers of Little Duchess laundry blue, to do a quick-change act with their package. The printed carton with its cellophane wrap had to be abandoned. A substitute had to be found that not only would prevent the escape of the lavender fragrance from the bluing, but at the same time would be economical to produce.

Experiments showed that a waxed paper wrap successfully retained the lavender aroma. Since there was quite an inventory of the printed boxes on hand, the company planned to use a plain waxed paper wrap until this supply was exhausted. Then they switched to a plain box with a printed waxed paper wrapper. This has proved very satisfactory from all angles. The package is inexpensive to produce; the same packaging equipment is used; there has been wide customer acceptance of the new box.

Only minor changes were necessary in the printing of the new wrapper. Instead of the blue ribbon motif printed around the side panels, there now are solid blue ends with the identifying picture of the Little Duchess imprinted on them. A dotted line along one end indicates where to open the box.

These colorful pink and blue boxes go to the dealer in a die-cut paperboard dispenser—one dozen to the unit. Dispensers are shipped to wholesalers, 24 units to the case, from which they are distributed to the dealer according to the quantity ordered. All the storekeeper has to do is hang them up.

Credit: Dispenser by The Gardner-Richardson Co., Middletown, Ohio. Wrappers by Kalamazoo Vegetable Parchment Paper Co., Kalamazoo, Mich.



Six savory herbs

When the Waverly Co. contemplated putting up savory herbs in an inexpensive gift package, they were faced with the problem of designing a unit with eye appeal which at the same time would be made of readily available packaging materials. Another important factor was that the cooking herbs had to be protected to retain aromas and to prevent flavors from intermingling.

Metal containers for this purpose were out. Glass and closures were scarce. Demand for set-up boxes was so great that the company felt they might not be able to obtain sufficient quantities to meet their requirements.

Paper in some form seemed to be the only solution. After casting around, Waverly selected a folding carton because such containers appeared to be more plentiful than any other type.

The six savory herbs are wrapped in individual glassine packets, because of their excellent protective qualities for the herb aromas.

The final result is a simple white carton with a colorful herb leaf pattern in red, green and brown decorating the top, front and back panels. On the two side panels is a stylized design showing a recipe book, a vinegar flaon, a spice jar, a measuring spoon and more leaves. Names of the items included in the package—basil, sage, parsley, marjoram, rosemary and thyme—are neatly printed in red around the bottom of the carton.

Credit: Cartons by Brooks & Porter, Inc., New York. Glassine envelopes by Mason Envelope Co., New York.



HISTORIES



Handy carrier

A Columbia University scientist was dared to "take the shine from the seat of his pants" and a new product, Shyn-O-Way, was born. This chemical formula which removes shine from clothing and upholstery is being made by Household Chemists, Inc.

To solve the packaging problem, the company went directly to key merchandise men, buyers and store executives to determine consumer preferences. The result is a compact carry-all kit, housing a 16-oz. bottle of fluid, with a wooden block and re-napping cloth for application of the product.

The die-cut folding carton is printed in blue to simulate a blue serge background and the lettering is in lemon yellow shaded with maroon. Both the bottle label and the re-napping cloth wrapper are similarly colored.

An interesting feature is the surface treatment of the bottle, label and wrapper. In each case half the surface has been varnished in contrast to the other half which is dull to suggest the use of the product as a shine remover.

The kit is so designed that the neck of the bottle slips through a slot near the top of the carton and the accessories fit neatly inside. Convenience in handling is a special feature. The built-in handle makes it easy for the customer to carry the package away from the store, an aid in the "carry your own" campaign. Labor costs and packaging materials may be saved since no exterior store wrapping is necessary. The carrying kit is easily stored at home and convenient since all items are in one unit.]

Credit: Carton by Freedman Die-Cutting Co., New York. Labels by Printcraft Press, New York.



1



2



3

1. To obliterate previous markings on re-used containers, one company has developed a special "salvage" paint. Note how clearly new stenciling shows over the paint. 2. Convenient roller for applying striping as required by Army Air Force. 3. Same roller used for corner marking required by Ordnance, Quartermaster, Chemical Warfare, Engineers, Medical and Transportation divisions.

Tools for marking overseas shipments

Second of a series on methods, materials and equipment for shipping military supplies

Today's conditions make it imperative for top-flight executives to get into the shipping department. Ordinarily, the routine proceeds smoothly enough. The goods are the regular products of the company; the shipping material follows standard patterns; there is no problem of availability of either goods or shipping material, and the incoming supplies are uniformly familiar in character. Most important of all, shipping-room personnel "stays put" for a reasonable length of time.

But now the picture is anything but that. Most concerns are making products they never made before, and those products must meet rigid government specifications and be subject to scrutiny by government inspectors in the plant. Moreover, the packaging and packing must comply with exact specifications and this too must often be done under government scrutiny. Plant expansions sometimes encroach on the space devoted to the shipping department so that the shipping activities must be conducted in unfamiliar quarters, sometimes with makeshift equipment. Containers are hard to get and many of them must be re-used. Shipping clerks must be selected from untrained and inexperienced people and often one is no sooner selected and trained than he is selected by Uncle Sam and trained for another kind of work. Little wonder that many headaches originate in the shipping department.

But those headaches aren't confined to one's own plant. The express companies, the railroads, the warehouses—all are subject to the same difficulties. As a consequence, the shipper must not only insure against probable errors in his own plant but he must also prepare his shipments to undergo the

many hazards they will encounter in their journeys to unaccustomed destinations. The situation demands patient and constant executive handling of an unusual type, and the job of preparing products for shipment calls more than ever for responsible executive direction, as well as a knowledge of the required procedures. In the last issue of MODERN PACKAGING was an article on the marking of shipments to comply with government requirements ("Overseas shipments Must Be Marked Right," page 60, October 1943). The present article is an effort to review some recent developments of specific application to the problem of marking merchandise for the benefit of the busy executive charged with the responsibility of following shipments through.

To begin with, the marking requirements vary for shipments made by different methods. Freight shipments, of course, are marked differently from express and parcel post shipments, while export shipments show a further variation. These differences apply even in normal times and are still more important now. The experienced shipping clerk, of course, is thoroughly familiar with these different requirements but, as has been indicated, not all shipping clerks today are experienced. One of the stencil machine manufacturers has gotten out an excellent booklet giving full and clear practical suggestions briefly presented that should be invaluable in any shipping department. Another company issues a catalog called the "Shippers Handy Helper," which gives a great deal of export information and includes the metric conversion table which is useful in marking shipments.

Not all shipments, however, can be marked by stencil. Shipping labels are still extensively used. One thing shippers

have learned by bitter experience is that due to the unusual hazards of today's traffic, shipping labels do not always remain in place. This has thrown a new responsibility on the adhesives, and the manufacturers of those materials have met the test by producing new types of thermoplastic adhesives which are doing a very acceptable job. Notable is a waterproof remoistening label paper (described on page 120 of October MODERN PACKAGING) which the Canadian government has found very acceptable in the labeling of munitions.

One company, specializing in the production of paper labels for shipping purposes, has issued a booklet they have recently prepared which gives explicit information about the proper use and preparation of shipping labels. Growing directly out of today's needs, this company has recently developed stock labels for use on military shipments such as a double arrow label to be pasted over the corner of a shipment so that the injunction "This Side Up" may be seen from two directions. Similar in purpose is a modernized version of the familiar "Fragile" label. This design, the manufacturer said with justifiable pride, was selected as the most effective design and approved by the Freight Container Bureau of the Association of American Railroads and by the Railway Express Agency.

Shippers of certain products for army purposes are well aware of the government requirement to use duplicate packaging lists enclosed in waterproof envelopes. One of these, as was pointed out in last month's article on marking, must be protected by a cover plate. A new asphalt-treated fibre protector for packing list envelopes, recently developed, has been approved by the Office of the Chief of Ordnance in Washington. The use of this fibre protector will release con-

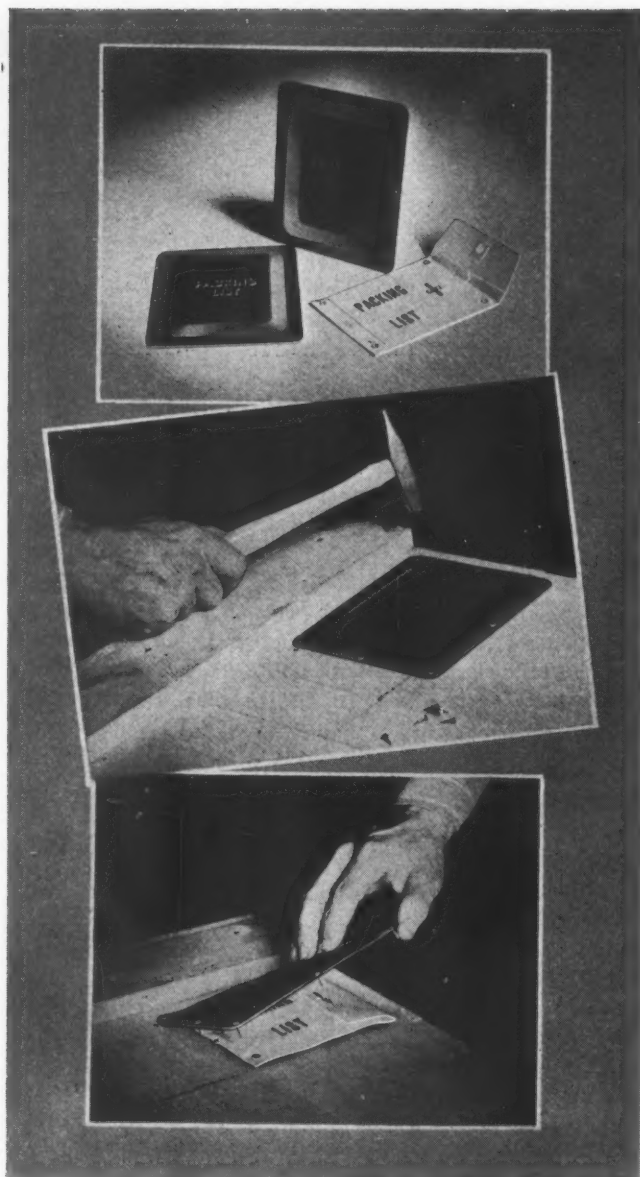
siderable metal for other war purposes. Its dimensions are adequate to accommodate the standard packing list envelope, as required by the government. But of great interest to every shipper is the possible post-war use of this protector to carry instruction booklets, advertising material, etc., going with a shipment. This protector plate has demonstrated its ability to prevent damage due to adverse weather conditions or rough handling.

The military branches were quick to require the stenciling of shipments because of the uniformity and legibility of that method of marking. Even so, the military men themselves did not always know the exact possibilities of the machines available. For instance, one of the early specifications stipulated a 2-in. letter for certain of the marks. When it was called to their attention that none of the three stencil machine manufacturers made a letter larger than 1 3/4 in. a revised specification was issued stating that a 1 3/4-in. letter would be accepted. The following is quoted from present government specs.

"An overseas address (either coded or in the clear as indicated in Section IX) will appear on all containers arriving at a port of embarkation or AAF Intransit Depot for overseas shipment. Such addresses will be stenciled or painted in a conspicuous place and manner. The stencil or painting will be at least 1 1/2 in. in height when the size of the container per-

4. Many convenient handbooks describe proper stenciling methods and other marking procedure. 5. Attention-getting stock labels may be used to designate special handling. 6. Cellulose acetate sheeting, 20-pt., makes a long-wearing stencil for military insignia.





7. The government specifies that one of the duplicate packing lists attached to every shipment must be protected by a cover plate. Illustrated here is a new asphalt-treated fibre protector that saves metal for this purpose. The cover plate is nailed over packing envelope. 8. Filled like a fountain pen, this marking device contains instant-drying ink, obtainable in six colors. "Pen" may be equipped with nibs in a variety of shapes. 9. Paint in stick form will produce color-fast, weatherproof marking on metal, lumber, rubber, stone, glass and plastics.



mits and in no case will the letters be less than $\frac{3}{4}$ in. When the container is over 10 cu. ft., the overseas address will appear on two surfaces of the container."

For domestic shipments, stencils of less than $\frac{3}{4}$ in. are permissible, depending on what division of the government you are sending your shipments to. Regardless of what one may be manufacturing, whether it be gun sights, important airplane parts, tanks and so forth, if the address is not clear this shipment may be lost in transit. The result is someone in the shipping room may be sabotaging many hours of labor used to go into an important product.

Stenciling machines are not expensive equipment and they have the further advantage of being very durable and not complicated to operate. For marking shipments in quantity, which is the case with most military production, the stencil method has obvious advantages, particularly in legibility.

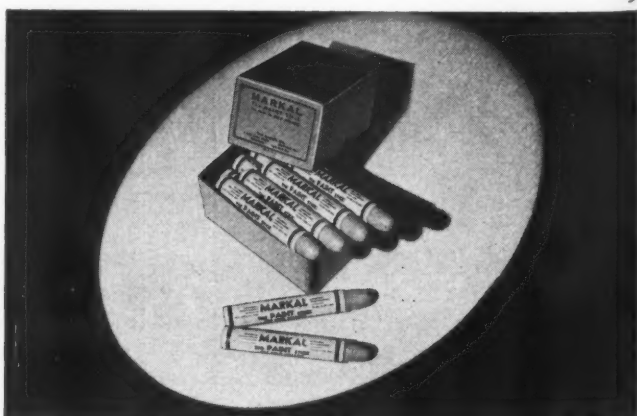
This latter advantage can very easily be nullified by carelessness in handling the stencil and in applying the ink. Here the chemist has gotten in some excellent work and various companies have produced quick drying inks of high penetrability. Some of these new inks dry so fast that they do not smudge even on the most absorbent surfaces—which fact does not for a moment cancel the need for care and neatness on the part of the operator.

To meet the need for a more durable and longer wearing stencil, one company hit upon using a 20-pt. cellulose acetate sheet. Ordinarily this would be too expensive to substitute for the familiar timpan sheet used for stencils, but it does particularly good service in stenciling army insignia for the various branches of the service, as is required by some of the specifications. Here a possible post-war use suggests itself: a stencil of this cellulose acetate sheeting could be used to mark shipping cases with a company trademark or trade figure.

Despite the current emphasis on the use of the stenciling machine, there is still plenty of occasion to use other types of marking devices.

The stencil machine manufacturers have experienced considerable difficulty in obtaining the best grade of stencil board, Chlorine has practically eliminated the canary color seen before the war. The production of the paper mills has been considerably curtailed. Stencil board is a specialty item necessitating the paper mills to change over their production for a limited time in order to supply the various stencil machine manufacturers with the raw board they need. Sources of supply have had to be changed several times and the board now purchased is not up to the quality secured before the war.

It is very important that heavy shippers do everything possible to save their stencils and make them last as long as



they can. By being wasteful and throwing stencils away you will cause a greater shortage than what would actually be the case if you would cooperate. If you are using oil board be sure and file your stencils away regularly and keep your brushes clean so that ink won't build up on the stencil. By using a thin type of ink, not heavily pigmented, the build-up on the stencil will be held to a minimum and will permit more prints to be made per stencil before it deteriorates.

All fountain brushes and regular stencil brushes before the war were manufactured with Chinese bristles which are considered the best in the world. Due to the war this source of supply has been eliminated and makers had to go to hog hair and other inferior bristles to keep production at a high level. The U. S. Government has passed regulations concerning the amount of Chinese bristles going into brushes and every care should be exercised that brushes last just as long as is possible. Care of your tip is most important. Clean it out every night with a good solvent so that when you start out next day there is no ink build-up on the bristle. This will permit many more markings per tip. Don't see how hard you can press the brush down. Don't use the daubing method, use a rotary motion in stenciling. If you are in the habit of pressing hard on the bristles, you will find that the new bristles will fan out much more readily than the Chinese bristles. Manufacturers admit receiving many complaints in regard to bristles fanning out, but this is something that cannot be helped due to the inferior quality of the bristles they are now compelled to use.

Some recent developments include a new paint stick marker especially adapted for use on cold surfaces. According to the makers, this is real paint in stick form capable of producing permanent, fadeproof, weatherproof markings on metal, lumber, rubber, stone, glass and plastics. While not designed primarily for use in the shipping department, this is a piece of marking equipment which has a wide variety of uses.

Another interesting marking device is a sort of fountain pen arrangement for using a special quick-drying ink which



10



10. Stencil cutting machines of this type will cut letters from $\frac{1}{2}$ in. to $1\frac{3}{4}$ in. high. Models designed for four and six-line stencils. 11. and 12. Marking crayons are made with qualities for use on four types of surfaces: rough wood, smooth cartons, glass and plastics, and for general factory checking work.

is obtainable in six colors. The "pen" may be equipped with nibs in a variety of shapes. The makers also supply a kit consisting of six pens, inks and fillers.

Just out is a new line of marking crayons in four different qualities for various purposes. One of these is for marking on lumber or other rough-surfaced substances; another for marking of cartons, bags, smooth wood surfaces, etc.; a third is a special soft-textured crayon for marking glass, plastics and similar polished surfaces; still another serves as a general checking crayon for factory use. All four types are available in six colors. The makers, incidentally, have done an attractive packaging job and their sales representatives are supplied with a packaged demonstration kit.

Of particular interest in these days when re-use of containers is a paramount necessity, one company has developed a "salvage kraft" outfit designed to obliterate previous markings on crates, corrugated containers and wooden boxes. This quick-drying ink is applied with a handy roller. One coat, it is claimed, covers the old markings and leaves the surface ready for new markings. One of the government departments, so the makers say, has made tests under which a small quantity of the material was used to salvage an almost unbelievable amount. (Continued on page 124)



HANDS OFF

1. Silver-plated locking plates for aircraft engines, oil-coated, are first wrapped in oil-saturated carney cloth, then in waxed paper. The packer's hands must not touch the micro-finished surface of the part.

Handling a war product so delicate that it dare not be touched by human hands puts something of a strain on packaging ingenuity.

This is the story of one company—Republic Aircraft Products—and how it has met the problem of packaging micro-finished aircraft engine parts with surfaces so precise that a fingerprint would render them useless.

Prior to this war there was no mass production of such superlatively finished parts and hence no technique had been worked out for their quantity handling. The methods used by this manufacturer were arrived at after considerable experimentation.

It had been found that the slightest trace of perspiration from the fingertips of inspectors or packagers was sufficient to corrode the mirrored surfaces of vital parts within a few hours. Furthermore, a scratch so slight as to be imperceptible to the naked eye might be sufficient to cause failure of the aircraft at a critical moment of combat.

The necessities were clear: to eliminate touching by human hands, following the final microscopic inspection, and to so package the parts that there would be no possibility of contact with corrosive or abrasive elements during packing or

while the parts were shipped to the engine assembler.

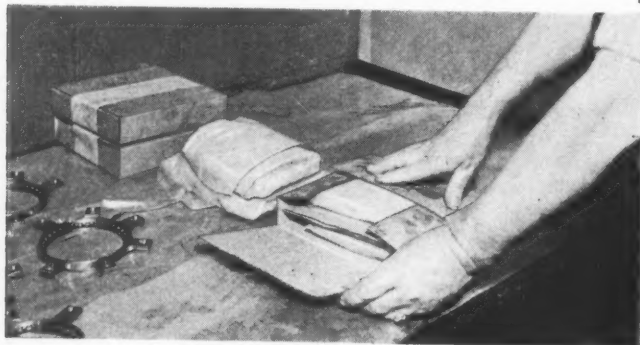
The method finally worked out involves primarily for all parts: (1) the complete removal of any corrosive element, such as perspiration that may have been picked up during the manufacturing process and (2) coating of all micro-surfaces with a rust-preventive oil.

All subsequent packaging operations are designed to protect the oil coating and maintain its effectiveness until the part reaches final assembly.

A specific case is that of valve seats, a critical engine part. Finished and inspected valve seats are de-greased in a trichlorethylene solution and wiped dry. They are then coated with the rust-preventive lubricant and nested in wooden trays carefully padded with soft cloth to prevent scratching. The trays, which hold 35 valve seats each, are used to deliver the parts to the shipping department.

In packing, the valve seats are wrapped in carney cloth which also has been saturated in the rust-preventive and which serves to keep the initial protective coating as a constant film during subsequent shipping and handling. As a further safeguard against the oil drying out of the cloth, a secondary wrapping of waxed paper is applied. The valve

2. Wrapped locking plates are packed two to a corrugated folder with spacer between and sealed with tape. 3. Valve guides get a final dipping in rust-preventive solution, are racked to drain and then wrapped in a special waxed paper.



seats are then packed in corrugated folders holding ten units each, which in turn are placed in corrugated shipping containers of double-wall construction testing 600 lbs. per sq. in.

Only three sizes of corrugated shipping containers are used for the many products of the Detroit plant, which are all comparatively small although comprising a number of aircraft engine part types. Ordinary corrugated board separators are used between layers of unit packages within the shipping container. Any excess space is filled with shredded newspaper as additional padding and shock protection.

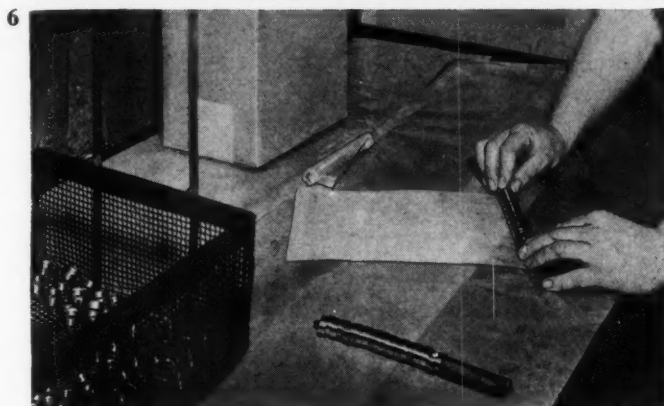
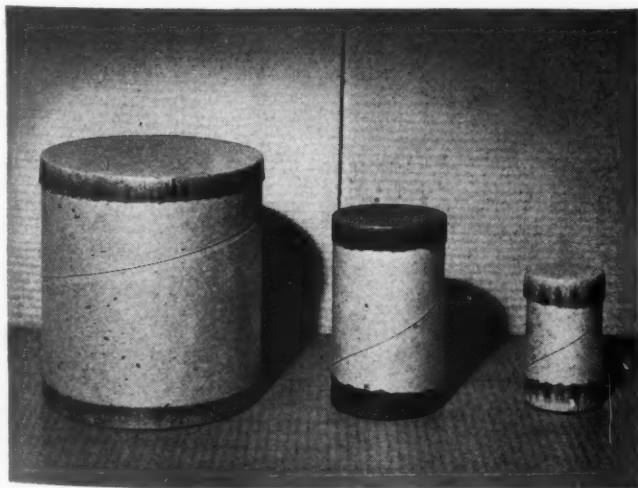
The only exception to the use of ordinary corrugated board partitions within the master container occurs in the packaging of locking plates, which require a degree of finish so fine that one surface must be silver-plated. For further moisture protection in the case of this product, waxed corrugated board partitions and a shipping container with a waxed interior finish are used.

These locking plates must be handled throughout the packaging process with exceptional care. An accompanying illustration shows the corrugated-board folder used with each plate, inside which the plate is contained in waxed paper with an oil-soaked square of carney cloth as the innermost wrapping. The parts are finally packed two in a corrugated folder with a spacer between.

Valve guides are handled in compartmented wooden trays throughout the final production stages. In the last stages, as finish becomes more delicate and protection of surfaces increasingly important, the tray compartment paddings are saturated with the rust-preventive oil, which assists in preventing deterioration from fingertip perspiration between handlings. Additionally, every effort is made to wipe fingerprints from the part as each operator finishes with it.

In the shipping room, the inspected (*Continued on page 124*)

4. Three sizes of tubular paper containers are used for interior unit packaging of numerous small parts. 5. Rollers are picked up on spindle (which is later removed), then wrapped in carney cloth and waxed paper and placed in cylindrical paper cartons. 6. Keepers are rolled in waxed paper, using a rod through the center. Rod is removed later. 7. Oil-coated valve seats are wrapped in saturated carney cloth and again in waxed paper. Parts are then packed in corrugated folders, which are laid in corrugated shipping containers in layers. 8. Master shipping containers are double-wall, 600-lb. corrugated board, sealed and reinforced with two half-inch metal bands each way.



Packaging



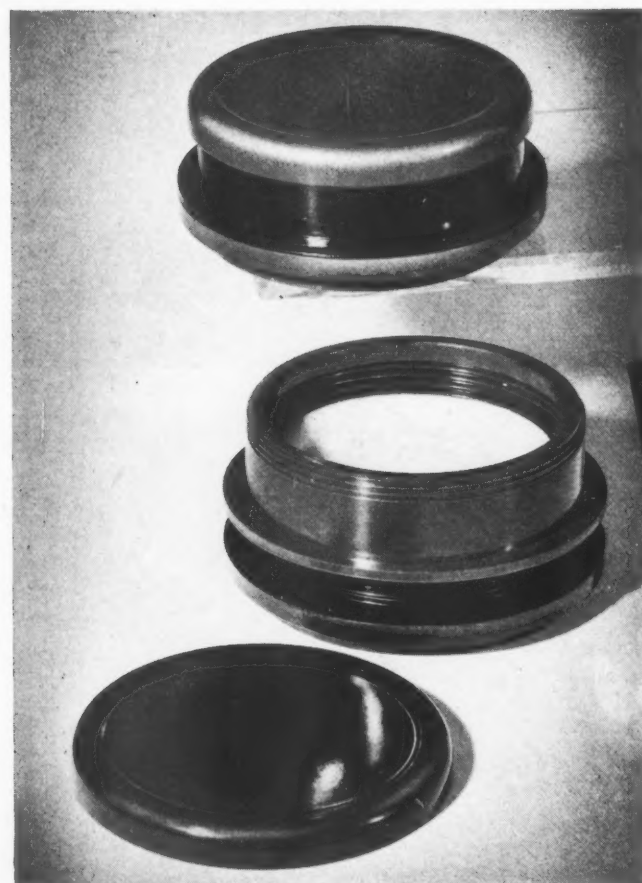
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1 "Buds of Foam" is the name of Babs Creations' new soap product which comes 70 to the box in a handsome gift package. Each "Bud" is good for one washing only and nests in its own partition in the pastel, hinged set-up box. Bubbles printed in an all-over design on the package carry through the idea of aerated soap suds.



2

2 An ice cream container now houses O-Pal Hair Dressing Cream. When the company had to abandon their former metal container, they experimented with fibre cartons. The one finally decided upon is said to have relatively good protective qualities and presents an inexpensive solution. Containers by Sealright Co., Inc., Fulton, N. Y.



3

3 A phenolic plastic expansible shaving cup containing J. B. Williams & Co. soap, distributed by John F. Schoof Co. through post exchanges and ship service stores, offers excellent possibilities as a postwar re-use packaging idea. The cup consists of three pieces: a base member which holds the shaving soap, a collar which is threaded on the inside and screws onto the base member, a cover which can be screwed onto the base for safekeeping while the cup is in use. The collar can be screwed upward to form a reservoir above the shaving soap in which lather can be formed. This unusual "shaving mug" comes in several colors. The item ranks "tops" among servicemen. Civilians will have to wait until priorities are a thing of the past. Plastics by Durez Plastics & Chemicals, Inc., Tonawanda, N. Y. Molded cups by Seder & Son Molded Products Co., Ft. Collins, Colorado.

4 Two Chinese maidens serving tea is the appropriate design adorning the new tea package of the Mardi-Gras Tea & Coffee Co. of Boston. This newly designed carton contains a blend of Orange Pekoe and Pekoe teas. To carry out the trade

4



Pageant

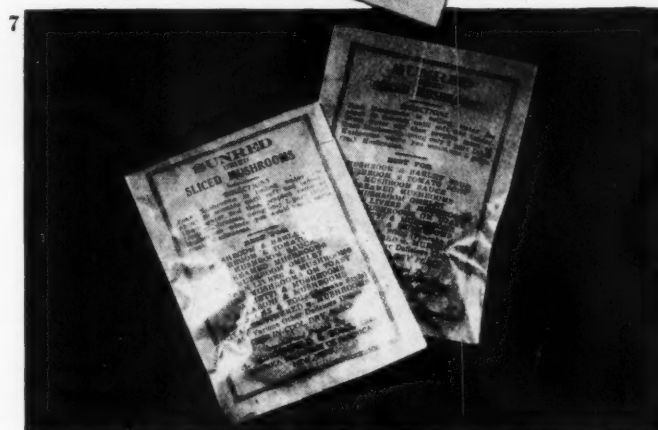
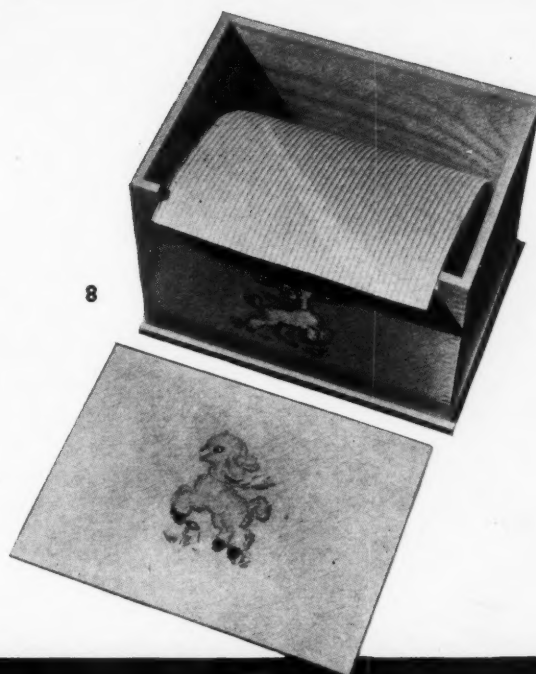
name, a gay half mask is printed on the front and back panels. Cartons by Eastern States Cartons, Division of Robert Gair Co., Brooklyn, N. Y.

5 BiSoDol Mints are now in a wartime container of cardboard. The package is sleeve-construction and boasts a convenient dispensing feature. A cardboard "cut-out" enables the user to eject a mint-at-a-time by merely tilting the box. Sleeve by American Coating Mills, Inc., Elkhart, Ind. Tray by F. N. Burt Co., Buffalo, N. Y.

6 The Personna Blade Co. has a ready answer to that eternal question, "What shall I get Him?" It's a year-round gift package of 50 double-edge razor blades in a self-mailing outer carton. Inside, the blades are packed in five regular units of 10 blades each, easily salable as non-gift items too. Another suggestion is the Personna Blade Mail. This is a compact little packet, containing 10 razor blades, which folds and seals like a regular envelope. Ample space has been left for correspondence. The combination letter and gift can be mailed anywhere for 6¢.

7 In keeping with the current interest in dehydrated foods, H. Schoenfeld & Sons have introduced a convenient small glassine packet of dried mushrooms to help pep up wartime meals. The packets are stapled to a card and can be conveniently placed for quick sale in supermarkets where customers help themselves. Directions for use are printed on the envelopes. Envelopes by National Transparent Envelope Co., New York.

8 As a boon to diaper-harried mothers comes H. H. Fleer's Victory Disposable Diaper in a convenient wooden box for nursery use with a removable top and wooden roller inside. The cleansing-tissue-like diaper comes in a roll and all mother has to do is snip off a desired length. The handy little box is enameled in pastel colors with a Disney-like lamb capering on the top and front panels. Box by American Crayon Co., Sandusky, Ohio.





1. Mary Dunhill wanted a motif that wasn't done to death for her new package family. A window display of shells suggested the idea and possibilities for many promotional tie-ins. Realistic third dimensional effect is achieved by embossing. Shells are lithographed in ten colors. 2. The old packages before the change-over.

How a Design Is Born

One week-end, a sales promotion director went "beach-coming" on Fifth Avenue, looking at shells in a window display.

Suddenly she turned to her companion.

"I've got it," she said.

"Got what?" said the bewildered companion.

"The theme for our new line of packages!"

The theme was the new shell design for Mary Dunhill English-inspired cosmetics.

"Don't you see?" she went on. "We've been trying to get an idea that's not been worked to death. Here it is. England—English beauties—wind-swept complexions—seashore—shells. . . ."

On Monday morning the idea went into action. It had great promotional possibilities. Thousands of people throughout the country are conchologists—shell collectors to you. There are many noted private and museum collections. Book stores have whole departments devoted to books written on shells. Shells are recognizable. You don't have to explain them. Romantic writers talk of shell-like ears—shell-like beauty. There was a wonderful chance for a tie-in with shell collections in store windows.



Then came the endless detail of adapting the shells to the packages in a way that would bring them all into a family group. The perfumes had been put out in three scents—and the eau de cologne in four. There was one theme of color and package design for the Hyacinth group; another for the Gardenia group, etc., but you couldn't look at all of them and be conscious (except by reading the tradename) they were Mary Dunhill.

The problem then was to find a way to adapt the shell theme as an identification for each one of the scents. This was the task assigned to the designer. It was done by first picking up the background color that had always been identified with each particular scent—blue for one, yellow for another, green for the third, and pink for a fourth. Then many trial sketches were made to get just the right effect for the shells.

The beauty of the shell design is in the delicate colors that have been reproduced and the third dimensional effect achieved by embossing. The shell bands and central motif on each of the boxes, cartons and labels are embossed and lithographed in ten-color process.

The embossing is the same throughout the entire line so

that all of this can be done at the same time with a minimum of handling. A sheet for the folding cartons to house the cologne is printed on the same stock as that used for the set-up boxes, run at the same time and then laminated to the carton before it is die-cut. This produces a refinement and elegance that could not be achieved by direct printing on the carton stock.

Labels used on the stock bottles are also printed in the same way on the same stock in ten colors and embossed.

Set-up boxes are used for all items except the 3-oz. cologne, which comes in a folding carton. The powder box is square, because of the difficulties of getting a round box today. The puff in each box is matched to the color of the box—yellow, blue, green and pink.

For its lipstick, the company was fortunate in getting white cellulose acetate plastic. This has a wreath of the shell design around the lid in green, brown and gold, reproduced by silk screen process. A wooden rouge box enameled white was selected to match the white lipstick. This, too, has a shell motif reproduced by silk screen.

Eventually other members of the Mary Dunhill family may be added to the shell line. Two Mary Dunhill leaders, however, will continue outside the shell family—a perfume, "Escape," and "Personalized" cologne.

The major problem for the perfume was getting a name. The company went through three months of agony before they found it. "Escape" was selected for its appeal in a serious world—escape from the grim realities of war, from the humdrum of a work-a-day world, to an evening of fun and gaiety. There was great rejoicing when this idea was finally accepted by the company and when the designer could go work on a bottle and package that would capture the spirit of the name.

It happened, by strange coincidence, that the designer found an old medicine bottle with a molded crossbar pattern simulating the panes of a leaded casement window. Mold marks were examined and the maker of the bottle was discovered to have the old molds.

This inspired the design of a box to simulate a gold casement window, closed with a heart-shaped padlock. Through the gold bars of the window may be seen a blue sky with pink clouds where birds are flying.

The name of the perfume was placed on a pink marble column depicted on one side of the box and appears in graceful, flowing script. Because of the package supply situation, it was difficult to have a hinged box. Therefore, a pull-off top on a maroon and gold pedestal was selected. The inside of the pedestal base is white satin. The tight-wrap of the box is printed and embossed and the top is blue satin to carry out the idea of sky.

Because of the dark color of the perfume and because of the space already provided on the front panel of the mold, the name "Escape" has been fused on the bottle in white, with a gold key in the background. Brand identification, Mary Dunhill, is placed on the neck of the bottle by decalcomania. A clear glass stopper was left on the bottle just as was used on the original bottle.

The packaging theme for "Escape" has, therefore, become the theme for the entire advertising and promotional theme of the perfume—gold casement windows, a padlock and a golden key—and has been presented widely in the company's magazine advertisements.

Mary Dunhill's "Personalized" cologne takes its name from the bottle on which the purchaser may order her metal initials. They deliberately did not include this item in the shell line. They felt that "Personalized" cologne had its own theme

and it was more important to continue emphasis of this than to change.

The designer chose as one of a woman's most personal belongings, her monogrammed note paper, as the theme for the folding carton design. He represented three different shades of note paper with three kinds of monograms. The paper used is vellum, ingrain finish in grays and whites. Scents are identified by the representation of a little calling card insert on which is imprinted the scents in the same colors as they are indicated in the shell line. These containers hold 3- and 6-oz. "Personalized" cologne bottles. An amusing note is the way the right-hand corner of the calling card is represented—folded down—the way the ladies of the nineteenth century did when they left a calling card.

Credit: Designs, George Sakier, New York, N. Y. Set-up boxes and cartons, Warner Bros. Co., Bridgeport, Conn. Bottles, T. C. Wheaton Co., Millville, N. J., and Carr-Lowrey Glass Co., Baltimore, Md. Fused labels and silk screen, Creative Printmakers Group, New York, N. Y. Lipstick and wooden rouge container, Fontaine Products Corp., New York, N. Y. Cellulose acetate for lipstick, Tennessee Eastman Corp., Kingsport, Tenn. and Celanese Celluloid Corp., New York, N. Y. Printing and embossing, Consolidated Lithographing Corp., Brooklyn, N. Y.



3. One of a woman's most personal belongings, her monogrammed stationery, was taken as the theme for the folding carton design of Mary Dunhill's Personalized Cologne.
4. An old medicine bottle mold with crossbar pattern inspired a box to simulate a padlocked casement window for perfume called "Escape."



Display

1 The "Hall of Fame" display of RCA-Victor directs music lovers' attention to outstanding artists who record exclusively for Victor. In the form of a painting mounted on an easel, the colorful lithograph is constructed so that the easel legs may be removed when the display has served its purpose in the window and the picture can be used as a hanging inside the store. When set up in the window, a ribbon runs from the illustration to a chart placed nearby giving the names of the famous artists who are portrayed in the full-color picture. Made by Sweeney Lithograph Co., Inc., New York, N. Y.



2 For the sample-loving consumer, Elizabeth Arden has adopted a face powder bar which neatly dispenses powders to "try on." The sampler is made of wood and is so designed that the merest touch of a push button releases an adequate supply of the desired shade which can be tried on the back of the hand. Eight glass windows give a view of as many shades of powder. The push buttons above each window work automatically so that once released they descend into place to cut off the flow of powder. Any excess grains fall into a groove especially provided for that purpose. Thus, the bar preserves its neatness at all times. The peach-colored unit is practically self-sustaining. The eight reservoirs from which the powders come hold a two-to-four-month supply. Beneath each reservoir in the back of the sampler an additional box of powder is held in reserve—

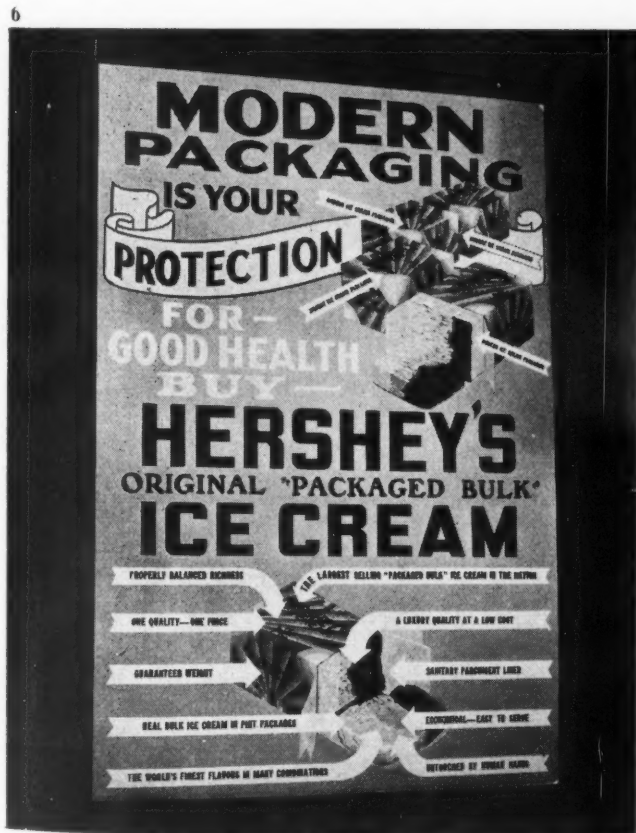
enough to last a whole year. There is a small plastic scoop which tucks neatly away in a groove specially made for it. Thus, in one handy unit, Elizabeth Arden has a time-saving, eye-appealing, sanitary sampler to cinch the sale at the point-of-purchase. The sampler requires no critical materials. Patents pending. Bar designed by Nathaniel H. Freeman in collaboration with Frederick Murray Breen, New York, N. Y.

Gallery

3 With 4 and 5. Einson-Freeman, display makers, have gone into the toy business to take up the wartime slack. With critical materials so scarce, they developed a line of sturdy fibreboard toys that is timely and attractive. Being past masters of display, the company has effectively mounted these toys in three different counter merchandisers that will surely attract the younger trade. Catchy slogans and descriptive copy explain the use of the various toys.



6 A full color display with detailed informative copy has been designed by the Hershey Creamery Co. to merchandise their packaged bulk ice cream. Using the "good health" angle, the poster points out the advantages of sanitary, modern packaging of bulk ice cream. Besides the large poster for point-of-sale display, there are handbill-size reproductions which are used in house-to-house canvass and for insertion in consumers' shopping baskets. Made by The Chromart Co., Inc., Philadelphia, Pa.





1. This display shows a few of the many types of thermoplastic roll-type labels now in everyday use for cake and bread packages. Developments indicate that the process will be extended to many additional types of wrapping and sealing after the war. Experimental machinery now set up indicates that this kind of labeling will be economically feasible.

Progress in roll-type labels

by Ralph C. Russell*

Roll-type labels and thermoplastic adhesives are not new. For many years roll-type address stickers have been available, and as far as thermoplastic adhesives are concerned, there have always been hot-melt resins together with the more recent nitro-cellulose compounds.

Recently, considerable progress has been made in reducing the possibilities to an economical point and for this the baking industry is primarily responsible. Thermoplastic end labels automatically applied from a roll are widely used on bread, cake and bun packages, and experiments are now being made in the application of top labels to these same packages.

Experimental setups for the application of roll labels—top, side or end—to all types of general packaged merchandise are now in operation, awaiting only the end of the war for their actual commercial application in a wide variety of uses where they have obvious advantages.

One such experimental machine, pictured herewith, wraps and seals a carton and applies identifying labels. Another applies to the top of a paper salt canister a label which also serves as a protective seal for the pouring spout.

Some of the additional possibilities which suggest themselves are:

1. Application to automatic sheeting machines for hand-wrapping operations.
2. Application to small bag-making machines where pre-printed material or preprinted text is not advisable.
3. For applying revenue stamps to cigarettes, tobacco, cigar boxes, liquor bottles and cases.
4. Labeling of pharmaceutical vials, jars and bottles.
5. On candy boxes for custom labeling and pricing.

6. On department store and chain-store merchandise where price labels now are applied either by hand or automatically.

7. As tamperproof seals for box lids and closures of all types.

8. For permanent or temporary labeling of glass, metals, plastics, fabrics, papers or any object or product which can be passed over a conveyor or carried on rollers.

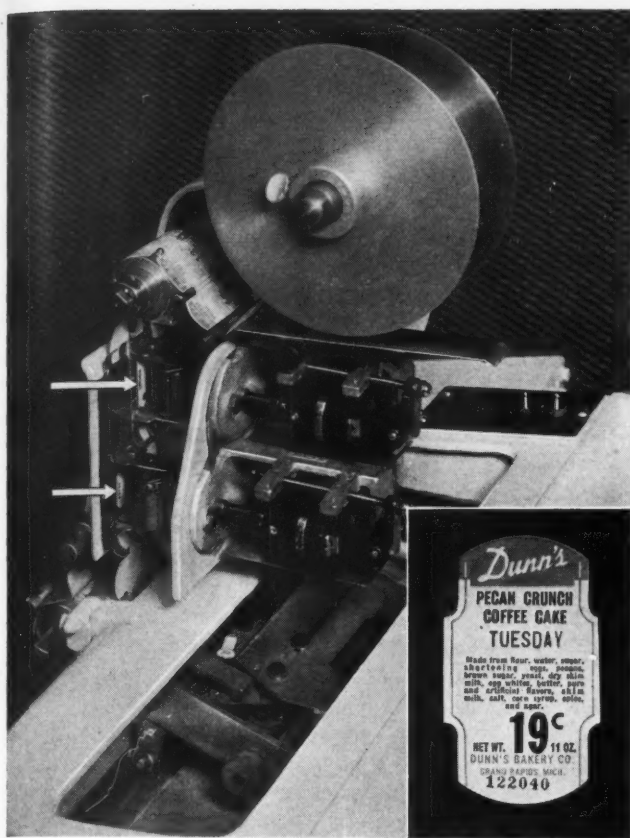
End labels on bread really started the ball rolling. Bakers were demanding a method of identification on the ends of bread wrappers which would offer complete brand identification at all times.

The usual types of thermoplastics previously available were hardly suitable for application to heavily waxed papers because of the difficulty of penetrating the layer of paraffin. One paper manufacturing company discovered that their new wax adhesive mixture (amorphous wax involving the addition of latex), developed originally for processed-cheese wrappers, made an excellent thermoplastic adhesive, perfectly practical for labels applied to waxed paper, cellophane, lacquered glassine, kraft paper or almost any type of wrapping material in use today.

Other types of thermoplastic hot melts and lacquers are usable in certain instances in cellophane and lacquered glassine, but the mixture of paraffin, latex emulsion and suitable plasticizers seems to be the best over-all answer.

This thermoplastic can be applied either before the printing operation or immediately thereafter, depending upon the printing press equipment available. In all cases it is applied prior to the die-cutting and final winding operation, as it is much simpler to handle a fairly large web of material than to attempt to handle narrow die-cut irregular papers.

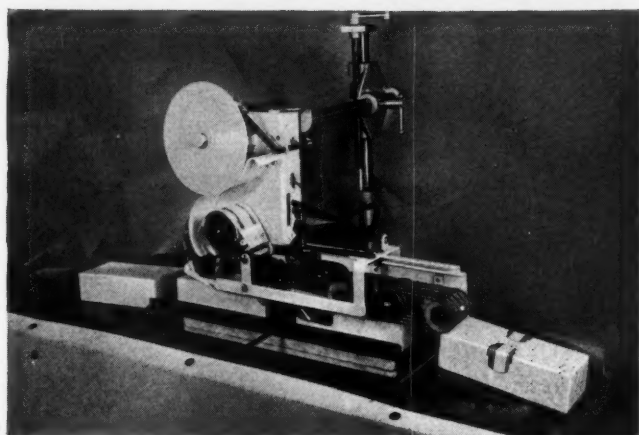
* Packaging Engineer, Oliver Machinery Company, Grand Rapids, Mich.



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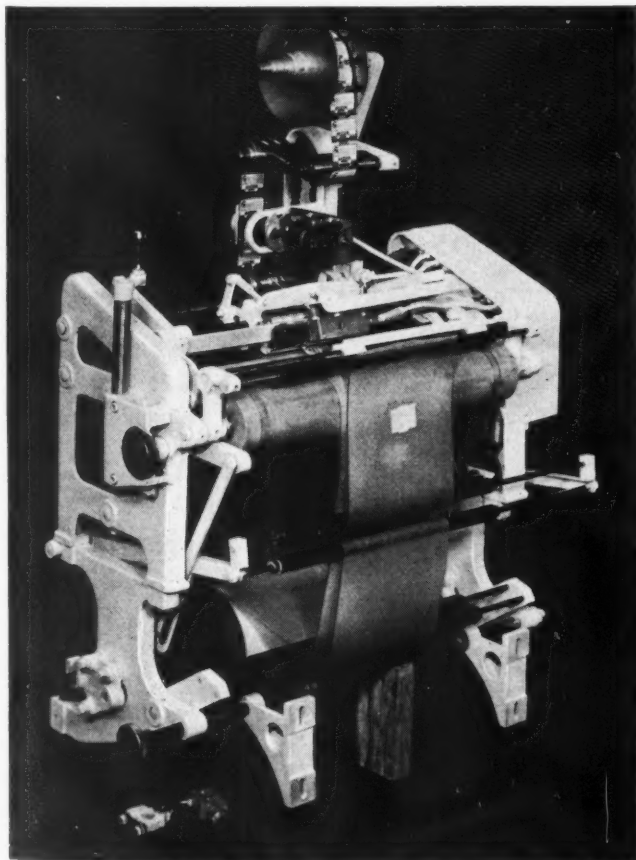
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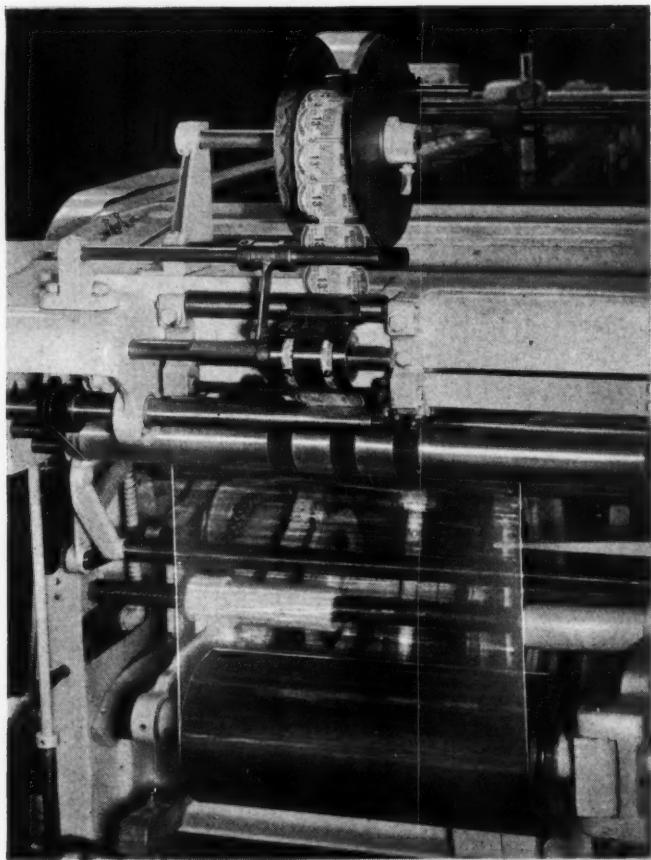
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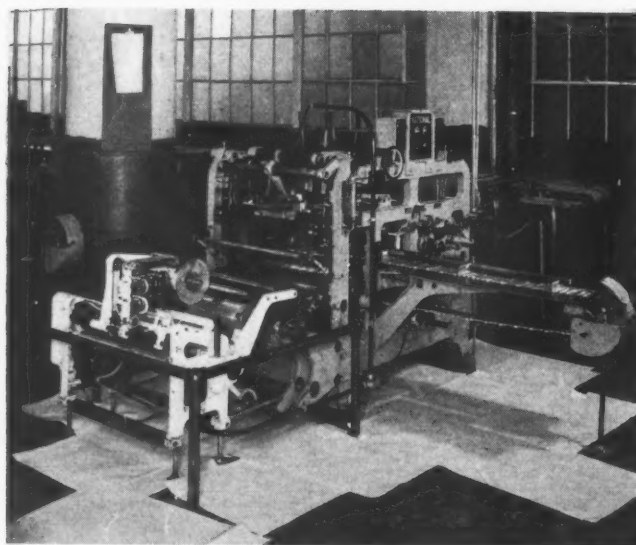
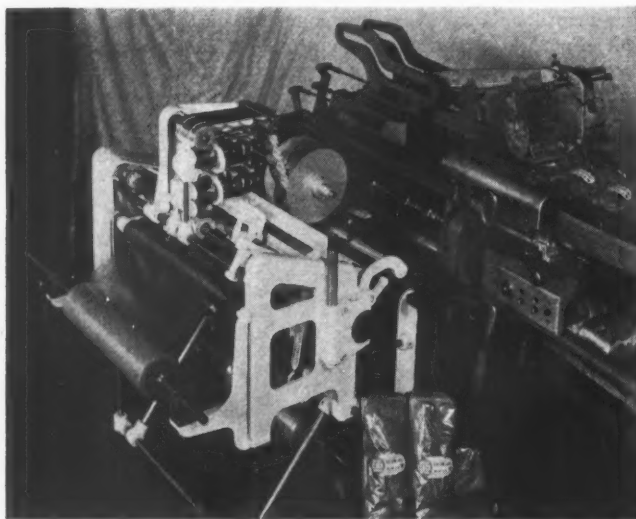
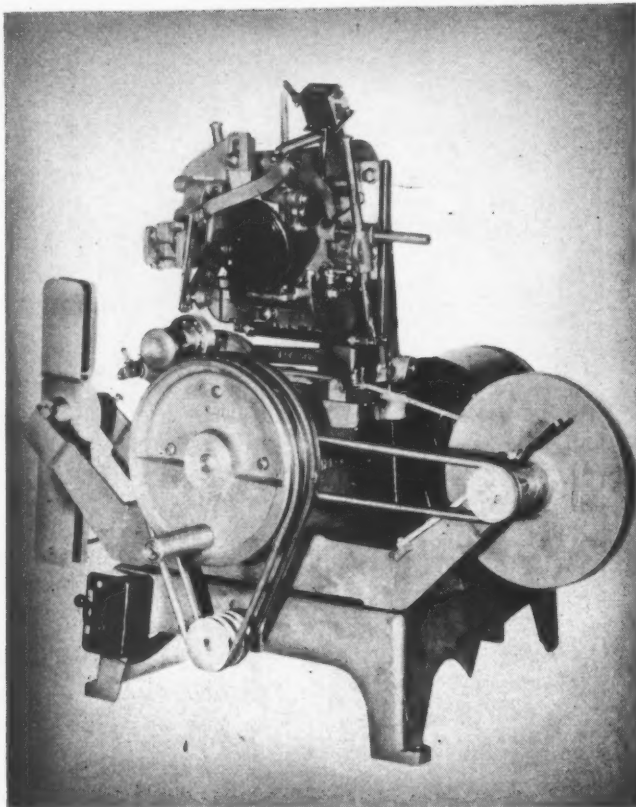
2. Double codes, both day of week and code number, are printed automatically in this labeling mechanism attached to a cake-wrapping machine. Other label information is pre-printed. Duplex coding mechanism is operated with heavy-duty solenoids and thermoplastic coated label is applied with thermostatically controlled heat and pressure. Upper arrow points to device printing day of week; lower arrow to numbering mechanism. Insert, lower right, shows completed label. 3. Thermoplastic roll-type end labels are now widely used on bread wraps. 4. Experimental machine for labeling and sealing cartons may have value for candy packagers. 5. Roll-type labeling unit suitable for attachment to side-feed wrapping machine. 6. Typical installation of roll labeling mechanism on wrapping machine. Label is applied to transparent paper automatically as product is wrapped.

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Machine manufacturers cooperated with the paper manufacturer in building equipment for these new labels, and it was not long before representative bakers from coast to coast were using them on their bread wrap. Much of this development has been retarded because of the war but it seems reasonably safe to predict that in the postwar years the majority of wrapped bread will carry end labels. At this point it is interesting to note that the new waxed paper conservation order, M-351, allows the use of end labels, not because of the merchandising advantages but probably for the reason that paper can actually be saved when the labels are properly applied.

It appears practicable to use such labels on cracker cartons, candy boxes, jars, vials, cans, cakes, department-store merchandise or anything which requires permanent or semi-permanent application of a label to an object. Certainly, the elimination of liquid adhesives in food plants is something to be desired along with many other advantages, economic or otherwise, which are instantly apparent. Some of these advantages might be listed as follows:

1. The complete elimination of all adhesives, brushes, glue pots, solvents, containers, etc.
2. Trouble-free operation—no jams caused by sticky adhesives, no packages stuck together when stacked, no labels lost in handling.
3. Accurate location—instantaneous adhesion; no slip-page due to wet adhesive, no loose corners.
4. Easy loading. A roll of 5,000 labels sometimes will last for hours—no flexing or fussy handling of stacked magazine labels.
5. Maximum flexibility. Roll labels lend themselves easily to code imprinting on the label machine itself, thus eliminating perforated and rubber stamping.
6. Labor saving. As opposed to hand application, roll-type labels automatically applied will eliminate at least one, and sometimes two, hand operations.

The application of thermoplastic roll-type labels is now an accomplished fact in the cake industry. Leading bakers have found this system suited to their needs, for all of the advantages previously mentioned fit in with their requirements.

The mechanical wrapping of cakes is comparatively new. Only in the past five years have any great strides been made in this direction. The first attempt to apply labels mechanically, as the package was being wrapped, met with conspicuous failures. Primarily, because of the mechanical problems involved, it was found to be almost impossible to keep magazine-fed labels operating with any reasonable degree of efficiency. Girls handling iced cakes could hardly be expected to place labels into a magazine without soiling the labels and sometimes getting bits of icing on the edges where binding and adhesion would quickly develop.

In cake production, the length of run on an individual item is comparatively short. Obviously, it is impossible to match the number of labels with the number of cakes of a given variety. Therefore, it is always necessary to remove the

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7. Small imprinting machine developed primarily for cake bakers. This machine quickly imprints required number of standard labels with variety and price, and rewinds labels for transfer to labeling attachment on wrapping machine. 8. Label attachment for bread wrapping machine. Label is applied to paper prior to wrapping. Finished package is shown at lower right. 9. Labeling installation on another type of bread wrapping machine.

remaining labels, putting them back in the original container where they often become untidy conglomerations. In comparison, the rapid removal and replacement of an integral roll of labels is fast and efficient.

Coding or dating of packages in the cake industry is a serious problem, as it is in many other lines where age of product or future identification is a necessity. The difficulty of imprinting, rubber stamping or perforating a small individual piece of paper is well known. On the other hand, performance of these same operations in the web or continuous roll is relatively simple.

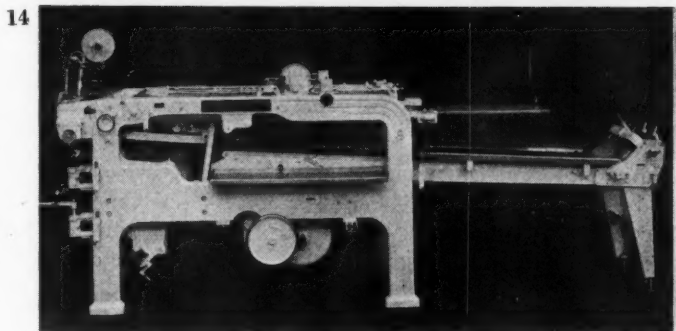
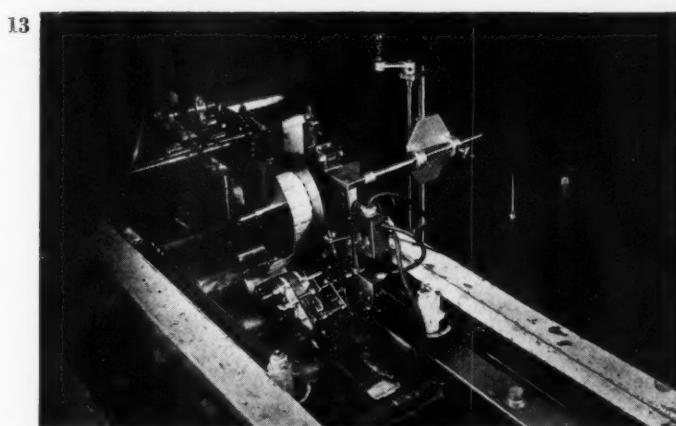
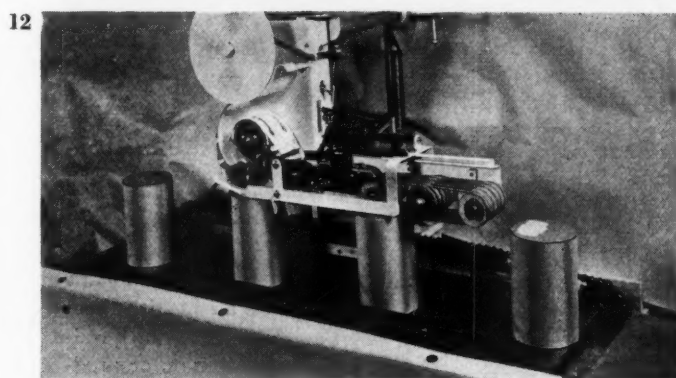
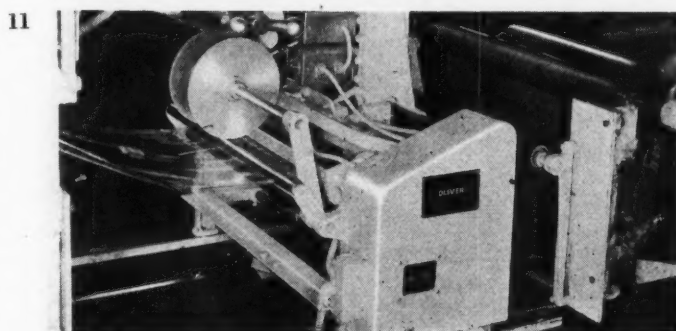
As indicated in an accompanying illustration, it is possible to imprint not only the day of the week but in addition a code number which can be either repetitive or continuous. All these operations are accomplished in the same mechanism which feeds, cuts, deposits and heat seals the label to the wrapper. Thus, the complete application of a coded, dated label becomes entirely automatic, with the elimination of rubber-stamping or a hand-perforating operation.

The ever-changing varieties in a cake plant complicate the inventory problem tremendously. Changing ingredients, weights and retail prices often necessitate the destruction of thousands of labels and, in addition, require the immediate production of an entirely new series of labels. Because roll-type labels lend themselves to simple mechanical unwinding and rewinding, it has been possible to develop a tiny printing press for the baking industry which will take care of these rapid changes.

In actual practice, the baker purchases economical quantities of so-called "blank" labels having everything printed except the titles, ingredients, etc., which are subject to frequent changes. If the bakery decides to put out, let us say, 5,000 cakes of a special variety, a roll of the "blank" labels is placed on the printing press and with suitable type slugs the entire lot is immediately printed and ready for the wrapping machine. Thus the inventory loss problem is completely eliminated, and in addition, maximum flexibility is afforded by enabling the baker to produce a new variety and a new label in a matter of hours rather than days or weeks.

Having seen what end labels can do for them in the merchandising and economical production of a wrapped loaf of bread, bakers are now asking, "Why not use a top label for individual varieties of bread?" The same advantages would accrue; namely, the lessening of the inventory problem and the strong probability that unit packaging costs could be lowered. Transparent wrapping of bread has made great strides in the last decade and is bound to be increasingly popular in the immediate future. The costs of printed transparent wrappers in comparison with waxed papers are well known and need not be detailed at this time.

Undoubtedly, there are many technical difficulties which have the net result of raising the cost of printed transparent wrappers beyond the reach of the baking industry on the whole, particularly for the lower-priced everyday types of bread. Nevertheless, printed design (*Continued on page 122*)



10. At left, two strips of partially pre-printed labels, and at right, labels after they have been imprinted at the bakery with variety and price. This on-the-spot imprinting is done by type of machine shown in Fig. 7. 11. Bread wrapper showing pre-labeling attachment. 12. Top label serves as seal and closure for pouring spout of a salt canister. This is an experimental machine. 13. Experimental attachment for application of a top label on bread after wrapping operation. 14. Wrapper with label attachment at upper left.



Paint now comes in this leakproof, corrugated fibre container. Extensive tests are proving its merit.

Paint went to war; the various ingredients making up paint went into strategic materials for war and along with them went the metal containers for paint and different paint products, dehydrated foods, as well as innumerable other products. Civilian demands had to be curtailed. On the home front there was a scramble for containers which would hold paint, thinners, oils and foods that were going to civilians. There was a search for materials; there were experiments with different kinds of containers made out of new and adaptable old materials. Then there were definite developments that grew out of the research and the experimentation. Containers were tested—some were found to be satisfactory; some a little better than satisfactory. Some of them have proved their worth and are being used with good results.

The first of the paint containers that were found to double well for the metal ones were the quart-size fibre cans, some of them with metal ends and some of them all fibre. A number of the paint companies adopted them and they have been marketing their products in them for some time now. All-fibre oil cans may also be seen on the market and several companies which tried out the quart sizes in small areas are finding them efficient enough to increase the territories in which they are used. MODERN PACKAGING has carried stories on these different containers as they were developed and their worth was proved.

Now a new 5-gal. container for liquids has been developed. It is being used by the Merit Paint Co. of New York City for the company's paints, thinners and oils. This container is different in several ways from others. First of all, the container is made of corrugated board. Since it holds 5 gallons, it is actually a drum of corrugated board. The majority of

Five gallons of liquid in corrugated board

containers developed for paints and the like have been of solid fibre. The shape of the new container is unusual—it is hexagonal, while others are round.

The fibre drum, of course, is no newcomer to the field of dry products, but the fibre drum for liquid products is a newer development.

This new drum was designed to meet ICC Specification 12L, to hold 5 gallons of inflammable paints. Basically, it consists of a container within an outer shell, which is of the required Mullen strength. The inner container is made to form a nest for the top and bottom, which in turn are held in place by a tray and six finger-shaped cut-outs at each end of the outer shell. The container has strength in every direction by virtue of its arch construction as well as flexibility due to the corrugations. No strapping, taping or special sealing machinery of any kind is required to set the drum up.

The outer shell can be made water repellent and the inner container is lined with various compositions to carry oleoresinous or aqueous liquids, acids or alkalis. When untreated, the drum may be used for dry materials, since it is siftproof and the projected chime at each end makes it easy to handle and carry.

One of the drum's desirable features is that it may be delivered knocked down, carrying about 10,000 to a carload. It is then assembled and lined by the consumer. It saves weight and space in shipping and cuts heavy inventory of containers or warehouse space. The container may also be produced in any city where there are corrugated board manufacturers, since its construction is simple.

When the drum first made its appearance about four months ago, the Merit Paint Co. decided to try it out. They took a number of them and filled them with paints and various paint products. They also submitted the drums to shipping and other tests and found that they came through satisfactorily. Now the company has had the corrugated drums in actual use and has shipped its products in them for several months. The drums, which were filled with paint four months ago and which the company has kept in the factory for observation, are still holding the paint. There have been no leaks and the containers are in as good a condition, the Merit Co. states, as when they were first filled.

Since the drums have been placed on the market only recently, there is not as yet a considerable record of how they stand up over a long period and withstand all the various kinds of rough treatment to which they may be submitted during the course of extensive shipping, handling and warehousing. However, several large paint manufacturers and drug companies are testing the drums. One company, after making preliminary laboratory tests which the drums were found to pass with good results, has begun to ship products in

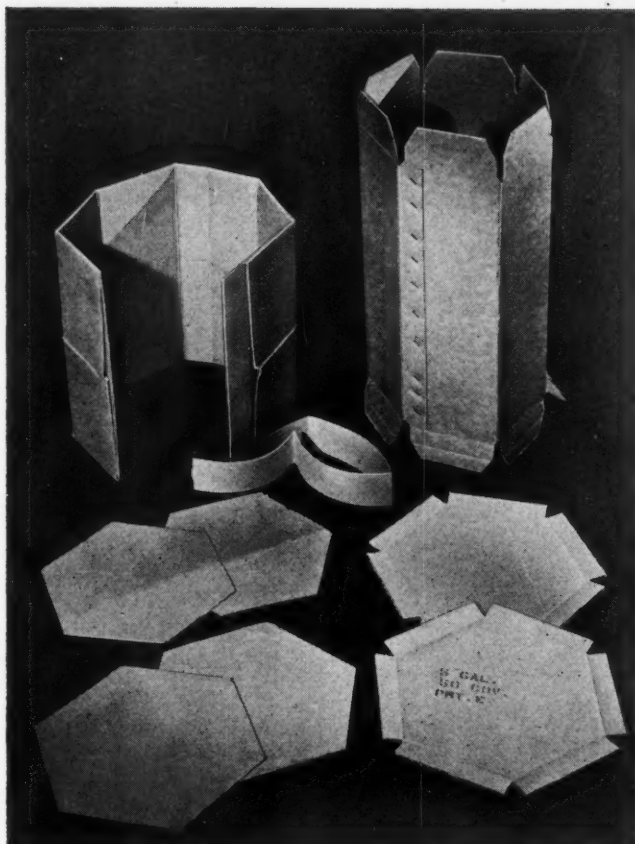
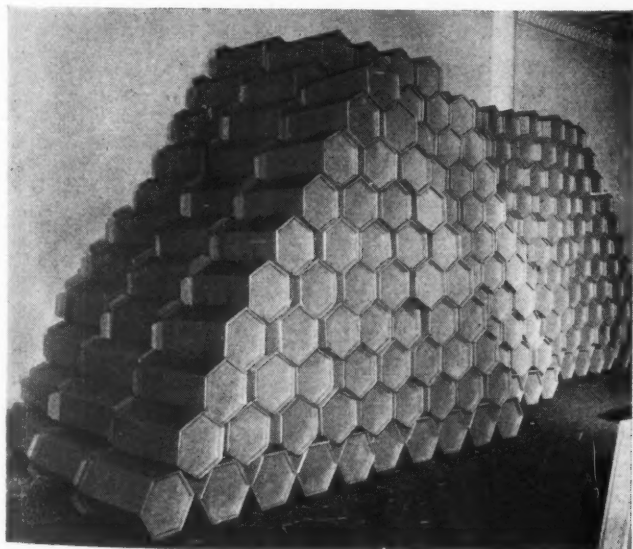
them from plant to plant. If the drums prove they can take this shipment over a period of time, the company will then pack their products in them for shipment direct to the many consumers throughout the country.

There is a general agreement among all the companies which have the drums for these tests that they are very strong and as yet there have been no leakers. Apparently the structure of the drum, its double walls together with the cushioning afforded by the corrugated board, can hold heavy oily products without giving way at any point. Since there is only one seam which is protected by overlaps and an outside wall, the seam does not represent a weak point. The two thicknesses of board at both ends, plus the tight fit of the heads made possible by ingenious construction, eliminate the weaknesses which might ordinarily be found at these points. There is no overlap on the outside to tear loose, or seam around the rim to allow leakage. When the protective outer heads are placed in the bottom and the top of the drum, they fit down tight on the inner shell; they also leave, just as in a barrel, a rim on which the person handling the drum can get a good grip. So far, as tests have been made by the various companies, the composition with which the inside of the container is coated is grease-resistant and has served as an effective retention for oily products.

One company has also tried out the drums filled with a product containing an alcohol base. The composition with which the drums were created by the manufacturer have also been effective in carrying this product. To date, however, there have not been tests by users of drums coated with water-resistant compositions. But some companies which produce items with a water base were expected to test the drums for carrying liquids of an aqueous nature. The manufacturer of the drums has made laboratory and certain field tests with the drums filled with water-base materials and claims they withstood the tests with entirely satisfactory results. Actual usage will reveal how well the drums can replace previous containers used for these types of products.

An advantage of the drum which a number of the users who are testing the drums have pointed out is that it stacks well both in shipping and in storage. The hexagonal shape

Neat as a beehive, the hexagonal-shaped drums pile easily with a minimum of waste space. The likelihood of the pile being displaced because of rolling is small. Knocked down, these containers may be shipped 10,000 to a carload.



The easily assembled drum consists of a container within an outer shell which is made to form a nest for the top and bottom. These in turn are held in place by a tray and six finger-shaped cut-outs.

permits the drums to be stacked up much like a honeycomb in the warehouse, in cars and in the holds of vessels. There is no loss of cubic space such as is found with round containers. Because of the shape, too, the drums do not roll and the chances that a shipment will be jostled about or dislocated are considerably less than for round containers.

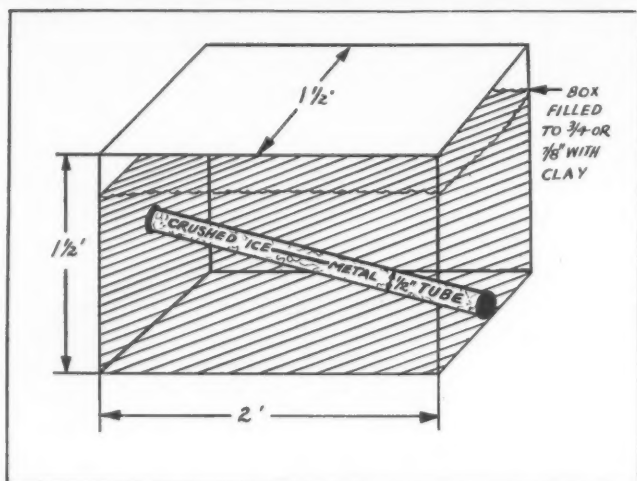
When the drums are shipped, it has been found so far that no special equipment, such as cleats and the like, need be used to keep them in place.

With the tremendous shortage of metal containers and the restrictions imposed on their use, the development of a satisfactory replacement, which may well have a carry-over in the postwar era, is fulfilling a vital need. The Merit Paint Co. feels that with this new drum they have found a dependable substitute. They have received no complaints about its performance from any of their customers. The containers have also been tested with dehydrated foods. They are said to have been found a suitable replacement for such products.

Recently the United States Government is reported to have taken an interest in this new container for the shipment of dehydrated food. Experiments are now being conducted by several suppliers of packaging materials of diverse types for the purpose of making the interior container moisture and vaporproof before inserting the inner envelope.

When those companies who have the drum under test now have had time to try them out in actual practice over a long period, experience will show just what place this corrugated drum will fill permanently.

Credit: Drum made by Paramount Container Co., New York, N. Y.



1. Metal container with screen top used for shipping leeches by air. 2. Diagram of specially constructed wooden box for one- to three-week wartime steamer shipments from Portugal. 3. Array of containers used for sending from 6 to 500 leeches.

Strange cargo

One of the most unusual packaging operations is that conducted by Charles Yaccobellis, Long Island City. He deals in live leeches. He ships them in everything from "snuff" boxes to specially ventilated metal containers lined and bedded down with wet moss.

Mr. Yaccobellis has been running this one-man business since 1915. His customers range from drug companies to foreign hospitals and universities. A great many ring fighters have used his leeches in treating black eyes and other discolored bruises. He can supply you with half a dozen or up to lots of 2,000. Large portions of American foreign populations still swear by this remedy dating back to the Middle Ages, while doctors are divided in their opinions of its use.

Leeches are not bred in this country. Mr. Yaccobellis imports from 200,000 to 300,000 a year from Portugal. War has removed them from the Lisbon Clippers, but he still gets them on an occasional Portuguese steamer.

Before the war, the Leech King's Portuguese representatives designed the metal container shown here for transatlantic plane shipments. When high priority numbers cut off air transport for the leeches, Mr. Yaccobellis designed a wooden container for use in steamer travel. The successful wooden container (shown in Fig. 2) was the result of five disastrous attempts to make an alternate container.

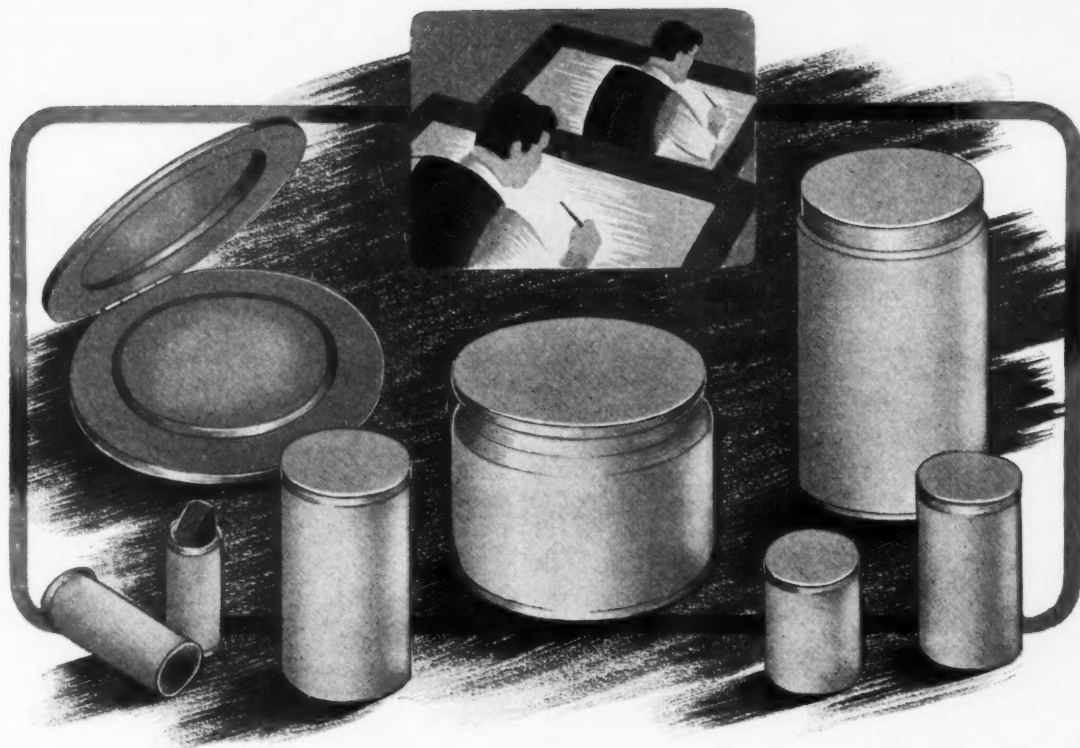
The wooden box, measuring $1\frac{1}{2}$ by $1\frac{1}{2}$ by 2 ft., contains a metal tube $1\frac{1}{2}$ in. in diameter, filled with crushed ice and sealed at both ends. The box is filled to three-fourths full with gray clay mixed with water, "the consistency of honey." The leeches are then churned into the clay until completely covered. The crushed ice serves to keep them at proper temperature, about 40 deg. F. The box, the best yet devised for the purpose, is 70 per cent effective for importing live leeches.

The 30 per cent loss occurs when the leeches work their way to the top of the clay and perish for lack of moisture or perhaps too much heat. The box is designed for trips lasting from one to three weeks. These containers are not used again as other lighter ones are used for domestic travel. Leeches are not affected by high-altitude flying.

The metal container illustrated is used almost exclusively for domestic air express travel because of its light weight and carrying capacity of as many as 300 to 400 leeches at a time. The lid is equipped with a handle and several screw-eyes soldered to the sides for locking. A 4-in. hole is cut from the top and a disc of window screen soldered in its place to provide ventilation. Wet moss is placed in the container. Leeches follow, then more moss.

Mr. Yaccobellis's 27 years in handling some 7,000,000 leeches have made him an expert in determining how long his leeches can survive in transit. "On a trip to Chicago," he said, "I always allow five full days, even though the actual flying time might be less than six hours. The unexpected might happen. Then too, there's always the possibility of the shipment being refused by the consignee with its subsequent return trip."

The smallest containers used are round tins containing three leeches. The "spice" box carries six. The largest wooden tub has a capacity of 500. Method of packing is the same for all domestic containers—moss in bottom, leeches next, more wet moss on top. The containers are not proof against excessive temperatures. Leeches die if exposed to temperatures of 80 to 85 deg. F. or below freezing.



PRODUCTS *of* PACKAGE ENGINEERING

The paper closures that are now so well-known in various packaging industries. . . .

The paper sifter-top cans which have kept so many important brand-named dry products in the marketing picture . . .

The paper lipsticks which have replaced the war-commandeered metals and machines formerly used for lip-rouge containers. . . .

The paper compacts which have kept 'em powdering in spite of war and priorities. . . .

These are products of a package engineering service which develops as it produces, has become known as the source of important new packaging ideas in peace and in war—and the mass-producer of packages and displays.



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TECHNICAL
EDITOR

CHARLES A. SOUTHWICK JR.



Electronics at work on quality control

by V. B. Baker*

1. Electronic research led to the highly efficient ignitron rectifier now widely used in industry. This ignitron introduced a basically new principle in rectifier design and performance.

To keep pace with the ever-increasing demand for individually wrapped commodities for the retail trade, the manufacturer and processor of practically all types of consumer goods has become package-conscious. Further, the trend has been away from the use of a small, continuously repeated pattern having no particular relation to the packaged unit toward the use of a single printed design for each package. Where a single printed design is used, application of photoelectric regulators provides packaging machines with untiring eyes to insure a complete and more accurately placed design on each package.

In some packaging operations, the printing, cutting, and wrapping machines are coupled together so that the wrapping material is a continuous web for all three processes. In such cases, cutting the material at the proper point with respect to the design is a relatively simple mechanical problem. However, in other cases the wrapping material is furnished in rolls by a supplier who performs only the printing operation, and in the packager's plant the printed roll is fed into the cutting and wrapping machines. In such cases the problem of keeping the design in correct register is more

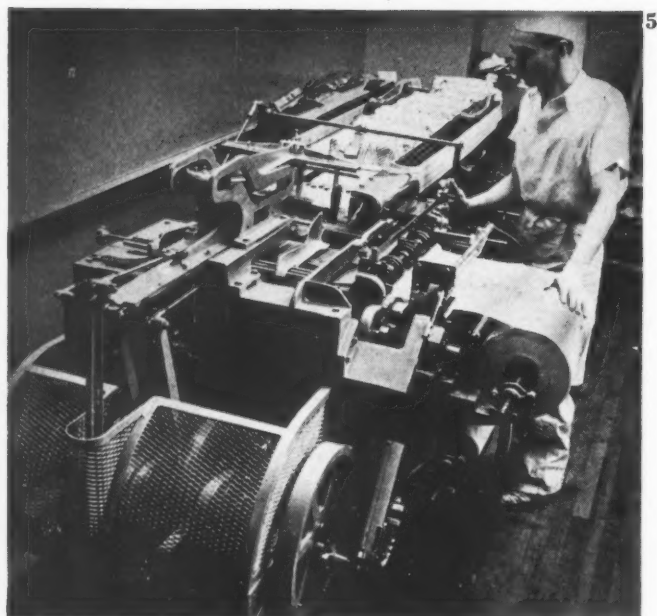
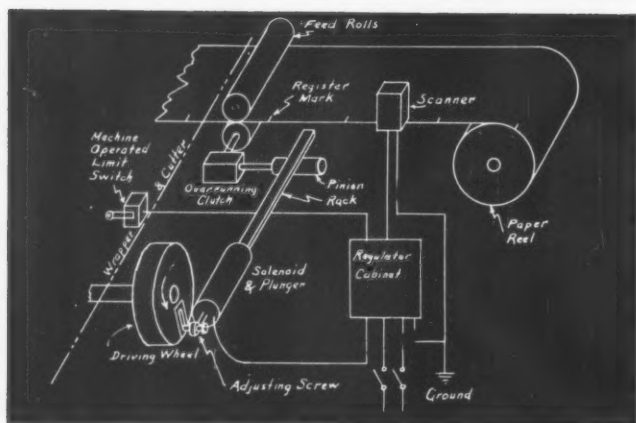
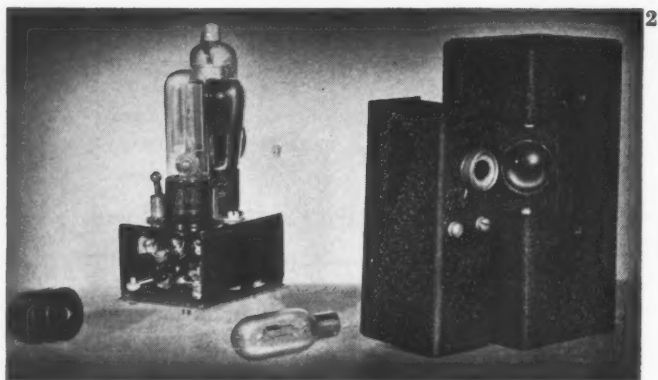
difficult. It is on these latter machines that photoelectric register regulators have found extensive application.

On machines using a printed roll of stock, the register problem becomes apparent immediately when it is realized that any errors which occur are cumulative. The feed mechanism on most wrapping machines is usually nothing more than a pair of pull rolls. Such a feeding means is subject to error. Additional errors are those introduced in the printing of the design itself and those resulting from a stretch or shrinkage of the wrapping material prior to use. These errors, though very small initially, gradually accumulate with machine operation until the actual error becomes intolerable.

For instance, if the total error due to all causes was only $\frac{1}{10}$ of 1 per cent, after 100 cuts, the design would be 10 per cent out of register, and after 500 cuts the sheet would be cut half way between the desired cutting positions. It is thus seen that some sort of control or regulating device is necessary to keep the design in the proper physical position with respect to the cutter at all times.

Inasmuch as the sheet is delivered directly from the cutter to the wrapping machine, the timing of the sheet arrival at the wrapper is determined by the cutter. It is, therefore, necessary to synchronize the paper feed mechanism with the

* Control Engineering, Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa.



cutter in order not to disrupt the sequence of operation which follows the cutter. For this reason, any corrective action necessary to bring the paper web into proper register with the cutter must be made on the feed mechanism and not on the cutter.

Paper feed mechanisms on present day wrapping machines are of two general types. The first, and perhaps simpler is the intermittent feed in which the web moves into the cutter a definite amount and then stops while the cut is being made. The second, and more involved is the continuous feed in which the paper is fed uninterrupted into the cutter and the cut is made on the fly. Each requires a different type of photoelectric register control.

The underlying principle employed in photoelectric register regulation is the use of a small spot or register mark approximately $\frac{1}{8} \times \frac{1}{2}$ in. printed on the paper simultaneously with the design to control the position of the paper in relation to the cutter. Where intermittent feed is used, arrival of the register mark impulse on the phototube stops the feed mechanism and the cut is made at the correct point. On continuous feed machines, the register mark impulse initiates a corrective action only if there is a time error in arrival of the impulse with respect to the cutting cycle.

The photoelectric register regulator for either type of feed consists essentially of a scanner which includes the optical system and contains a light source; phototube and amplifier tube; the main regulator cabinet which houses the thyatron tubes, power supply and relay which controls the feed mechanism, and a machine operated selector or limit switch. As described later, certain additional equipment is required depending upon the type of control employed.

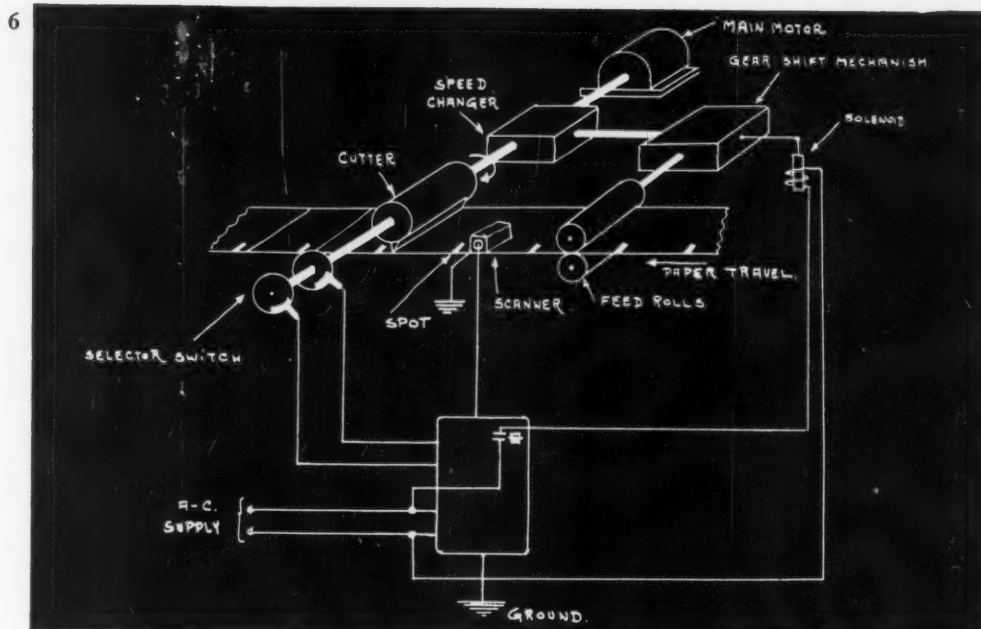
Intermittent feed

In Fig. 4 is shown a register regulator applied to an intermittent feed wrapping machine. Position control of the paper is obtained by introducing a solenoid release mechanism between the feed rolls and the cutter which is driven from the main drive of the wrapping machine. As the paper advances into the machine through the action of the rack, pinion and over-running clutch, arrival of the register mark impulse on the phototube causes the regulator to reverse the solenoid potential temporarily. Since the solenoid plunger is under tension at the time of current reversal it pulls out and loses control of the rest of the cycle. This action stops the feed with the material in the correct position relative to the cutter knife and the cut is made.

As the wrapping cycle continues, the machine operated limit switch closes momentarily allowing the regulator again to pick up the solenoid reversing relay which has its own holding contacts in parallel with the limit switch contacts. Thus, the original polarity is restored to the solenoid in preparation for the next cycle. On the up stroke of the rack, the plunger again seats itself and the over-running clutch prevents any movement of the feed rolls. When the rack starts down, the over-running clutch engages, the feed rolls revolve and the feed cycle is repeated.

2. Components of a typical scanner, including (left to right): phototube and amplifier assembly, 6-volt projection lamp, housing for light source, housing for phototube assembly. 3. Control cabinet for scanner, including two thyatron power tubes and small timing tube in center. 4. Schematic arrangement of intermittent feed wrapping machine pictured in Fig. 5, showing component parts including scanner, regulator cabinet and solenoid. 5. Intermittent feed wrapping machine for cutting labels and wrapping bread. (sketched in Fig. 4). (See also p. 82).

6. Diagram shows schematic arrangement of mechanical equipment for continuous feed, one-way correction. Correction of material position is accomplished in one direction only. Position control is accomplished by introducing the solenoid-operated gear shift mechanism between feed rolls and cutter. 7. Schematic arrangement of mechanical and electrical equipment for two-way correction. Position control is obtained by connecting a mechanical differential between feed rolls and cutter.



By means of an adjusting screw on the rack-driving member, the machine is arranged to feed a length of material slightly in excess of the distance between the register marks when the solenoid is not released. This insures positive separation of the magnet and plunger, a requirement for stable operation of the control equipment.

Operation of the regulator proper is described briefly as follows: the amplifier tube in the scanner serves to amplify the voltage impulse caused by the rapid change in phototube illumination as the result of the sudden appearance of a register mark under the scanner. This amplified voltage impulse is impressed on the grid of a thyatron tube in such a way that the grid is made more negative. This increased negative bias causes the thyatron to cease conducting current and the reversing relay drops out, which, in turn, drops out the solenoid.

With a register regulator applied to this type of machine, accuracies of $1/16$ in. or better may be obtained, providing no sudden variations in paper position occur as the result of sudden changes in reel friction. The minimum permissible paper speed is usually determined by the color contrast of the register mark and paper (in terms of phototube sensitivity).

Continuous feed, one-way correction

Register regulation as applied to a continuous-feed wrapping machine is shown in Fig. 6. Correction of material position is accomplished in one direction only. The basic requirement for successful register regulation is the control of material position relative to the rotary cutter rather than the material speed. Position control is accomplished by introducing the solenoid-operated gear shift mechanism between the feed rolls and the cutter.

The equipment is arranged to feed the material slightly too fast. As the material advances and the register mark appears ahead of schedule under the scanner, the impulse causes a relay in the regulator to pick up for a definite time interval. This relay energizes a solenoid on the gear shift mechanism causing the feed rolls to decrease the material speed for the same time interval. By proper adjustment of the time interval, the material is made to attain the correct position relative to the cutter knife.

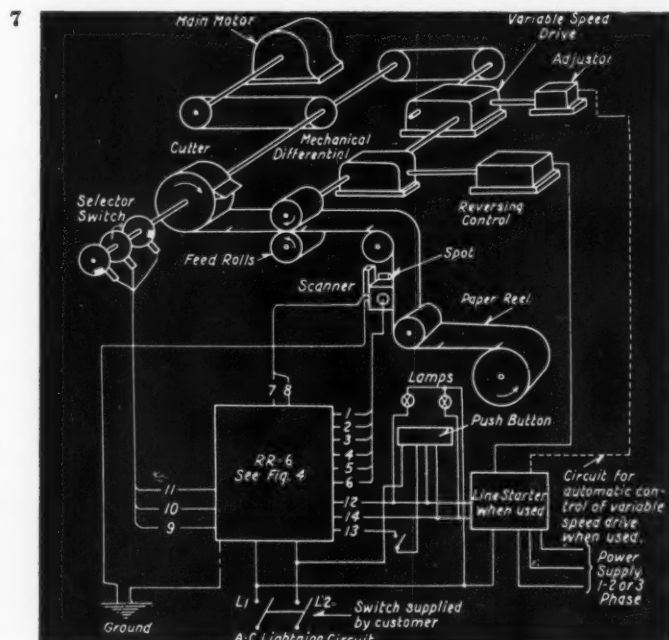
A rotating selector switch operated from the cutter shaft may be used to prevent operation of the regulator except when

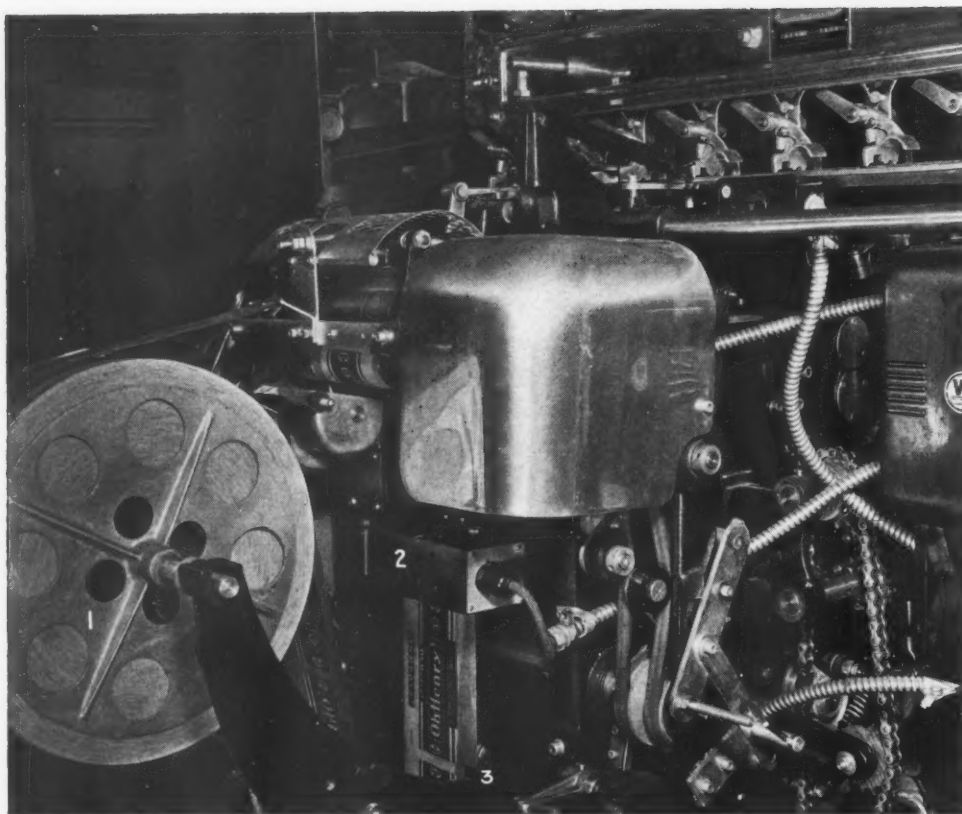
the switch is closed. This scheme may be employed in register control where it is desired to cut the paper at some prescribed point in the printed design or character.

To avoid hunting of the system, the range of control of the gear shift mechanism should be rather small. That is, the relative material position should not change more than approximately $3/32$ in. for a one-second closure of the control relay at the usual operating speeds of wrapping machines.

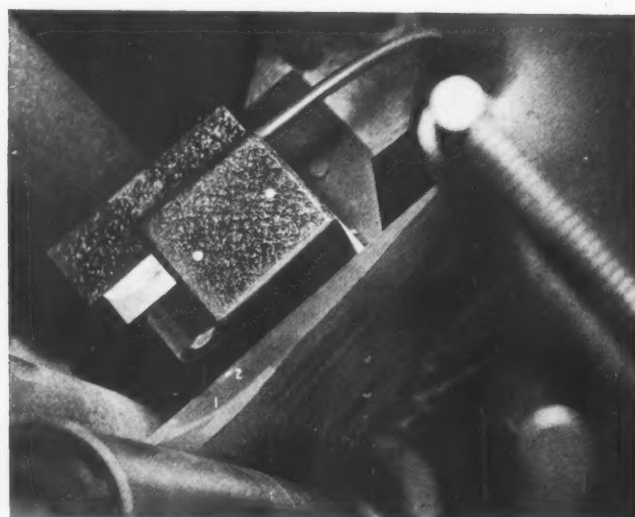
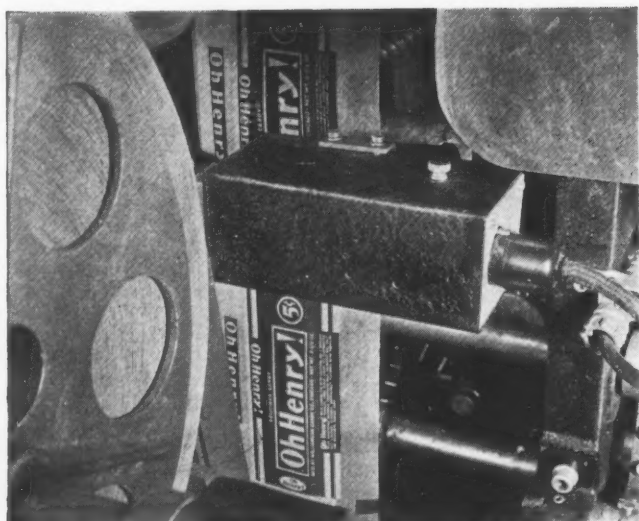
Operation of this type of register regulator is similar to that previously described except that the control relay is made to pick up with the register mark impulse. Moreover, a second thyatron is added to provide the adjustable time interval during which the control relay remains energized. Accuracies in the order of $1/32$ in. or better may be obtained with this type of register control. However, here again the accuracy is dependent upon the mechanical characteristics of the machine. Application of photoelectric register control to a loose-jointed, erratic operating machine is not the cure-all for such ailments.

The maximum paper speed depends upon the relative color of the register mark and the paper from the standpoint of





8. This electronic regulator positions the wrapper for cutting at precisely the proper time relative to the printing by means of the small colored "register marks" (usually $\frac{1}{8}$ in. by $\frac{1}{2}$ in.) shown at the edge of the strip. Cutting is held within $\frac{1}{32}$ in., plus or minus, of the desired position. 9. A close-up of the scanner and register mark as shown on machine in Fig. 8. 10. A close-up showing details of scanner operating from reflected light. A light beam giving a spot from $\frac{1}{4}$ to $\frac{1}{16}$ in. is usually satisfactory, according to the best experience with this type of equipment.



phototube sensitivity. With good color contrast (black spot on white paper), speeds as high as 3,000 fpm can be obtained. However, with only slight contrast, the maximum permissible speed may be no more than 500 fpm.

Continuous feed, two-way correction

Position control providing two-way correction is usually obtained by connecting a mechanical differential between the feed rolls and the cutter as shown in Fig. 7. By rotating the normally stationary adjusting shaft of the differential, the speed of the feed rolls may be made to increase or decrease temporarily depending upon the direction of movement of the adjusting shaft. Thus, the paper relative to the rotary cutter is moved slightly ahead or slightly retarded. If the regulator indicates correct paper position, no action occurs; however, if the register mark arrives at the scanner too early or too late with respect to the cutting cycle, the regulator gives the differential an impetus to retard or advance the paper as required.

A rotating selector switch geared or coupled to the rotary cutter is synchronized with the register mark. When the register mark is out of position, one or the other of the selector switch circuits is closed, thus allowing one of two thyatron tubes to fire from the impulse of the register mark. The firing tube picks up a relay which, in turn, energizes the proper coil in the reversing contactor and the reversing control operates the differential to correct for the observed error.

A timing thyatron is also used to permit adjustment of the time during which either thyatron controlled relay remains energized. If the wrapping material is still out of register after one cycle, the operation is repeated in the next cycle and continues until the cut is made at the proper point.

The only difference between this and the preceding regulator is the addition of a third thyatron tube which may also be actuated by the register mark impulse. Thus, two tubes are controlled from the register (Continued on page 126)



ON PRODUCTION LINE

OR FRONT LINE

"RATIONS" PLAY A VITAL PART

A LADY-LIKE appetite is out, when a woman is doing a man's job on the production front in wartime. Hearty, nourishing food, and plenty of it, for those who work or fight is basic to victory.

In the great food plants of the nation, Pneumatic Packaging and Bottling Machines are turning out whole armies of nourishing foods—to be shipped to battle fronts and war production centers the world over . . . Only through ample rations can brain, muscle, and the will-to-win be kept at victory pitch.

Pneumatic Machines are packaging vitally-needed medicines, too, with unprecedented speed and precision. While at the home plant today, Pneumatic is largely engaged in producing essential ordnance equipment. In such times, the sound design, accurate engineering, and reliable construction of Pneumatic Machines are put to enormous tests—and not found wanting.

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CARTON FEEDERS
BOTTOM SEALERS
LINERS
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TOP SEALERS
TIGHT WRAPPERS
also
SPECIAL COMBINATION
PACKAGING UNITS



Exhibit booths were assigned to various branches of the services for the display of packaged materials. The exhibition was characterized by precise information about export packaging with attendants present to answer questions.

TAPPI—Army-Navy requirements conference

The Army and Navy Requirements Conference of the Technical Association of the Pulp and Paper Industry, held in Chicago Sept. 21-24, represented an all-time high in TAPPI's endeavors to co-ordinate the activities of the paper industry with the needs of the armed services.

Very definitely the stress was on performance requirements; there were many reports as to how material is getting to the battlefronts.

In addition to the full three-day program of reports, round tables and technical sessions, there was an exhibition consisting of booths assigned to the various branches of the services. In each booth there was displayed a variety of materials which are being packaged; cut-away packages; packages which had been tested, and packages which had been shipped to foreign points. At each booth, there was someone in constant attendance able to answer questions and give additional detail on packaging requirements and current performance. This whole exhibition was characterized by precise and detailed information as to current methods of packaging, and in every case the coverage was very complete.

The entire day, Tuesday, the opening day, was taken over by the services, with talks ranging from reports of personal battlefield inspection trips to future specification changes and future requirements of the various branches of the services. This entire program was very objective. Most of the speakers went into detail as to particular specifications and future trends as to new test methods, new performance levels and other details which might be included in the future.

The Tuesday sessions were, in essence, a bringing together of all of the problems now facing the armed services based upon production and shipment under current specifications. These sessions were very well presented and attended.

Any questions arising from this meeting were written and turned in to the Army-Navy Panel for a more detailed discussion. Wednesday's meetings were, however, chiefly devoted to reports on various paper problems, and the papers presented at this session were typically and particularly applicable only to the paper industry.

One of the highlights of the meeting, from the standpoint of packaging interest, was the Thursday afternoon session on water-vapor permeability testing. This session is covered fully below (Page 102), but briefly its feature was the presentation of a new method developed by the American Cyanamid Co. for very rapidly determining water-vapor permeability.

Following are summaries of some of the papers of particular interest to the packaging industry, presented in order as they appeared on the program:

Navy Supply Lines, by Rear Admiral Everett G. Morsell, district supply officer of the Ninth Naval District.

Proper packaging may shorten the war and save many American lives, Admiral Morsell declared in his keynote address, for packaging is a vital phase of logistics. Our supplies are getting through to be employed to the best advantage against the enemy, but serious losses of supplies have been sustained from failure to observe necessary packaging, packing and preservation requirements, and these losses in some cases have seriously affected operations.

Operational conditions constantly change. New types of equipment and varied supply requirements demand constant developments in packaging. But the progress we have made through co-operative effort to "pack it right to reach the fight" gives every assurance that continued co-operation be-

tween Government agencies and industry will result in a satisfactory solution for every packaging problem that arises in this war of supplies.

Packaging Materials Required for Preservation, by Lieut. (jg) D. R. Wheedon, Jr., Philadelphia Naval Aircraft Factory.

It is as important to design a proper preservation procedure as it is to design the part itself, Lieut. Wheedon said, for under present conditions, improper preservation can render the part as useless as improper design. Lieut. Wheedon listed existing Army and Navy aeronautical specifications for preservation and packaging and gave a brief description of each. He then went on to tell of some of the new things which are being tried in the Naval laboratory in the way of packaging and preservation and which may appear in future specifications.

In the case of the AN-P-12 greaseproof paper specifications, a corrosion test is being seriously considered. A polished 1-in.-diameter metal rod, 3 inches long, is rolled in a 6 in. by 9 in. sheet of the paper to be tested; the ends are folded in and the paper is tied by means of a wire. Each paper to be tested is rolled on a polished steel, a polished copper and a polished aluminum rod. The wrapped rods are then exposed in a cabinet at 100 deg. F. and 95 per cent relative humidity for 68 hours. If used, the requirement would be that there be no corrosion on any of the three rods at the end of this period. Both a folded greaseproof requirement and an aging test are being tried.

Regarding pressure sensitive tape under AN-T-12, the inclusion of an additional type of tape which will be paper-backed instead of cloth-backed is being considered. Also considered is modification of the moisture-vapor transmission test procedure on pressure-sensitive tape to the extent that the tape be applied over a slot in a thin metal disc, which is in turn sealed with wax in the cup normally used in container material testing.

It is proposed to delete the type requirements based on thickness of the film in plastic-film specification AN-O-P-406, and instead have only two types, one of which would be a heat-sealing and the other a non-heat-sealing type of film which would be sealed by special means. Further, it is possible that the moisture-vapor transmission test for this material will be made to accord with the moisture impervious container specification AN-C-67.

It is likely that AN-C-67 itself soon will be revised to specify three types of containers: (1) a transparent container, (2) an opaque container with a window and (3) an opaque container without a window, the latter still including a humidity indicator. A creasing test for use on flexible materials when testing for moisture-vapor transmission will be specifically stated, probably as follows: A 6 in. square sample will be folded with four equidistant parallel creases placed in the square by alternating the direction of folding on each successive one so that the sheet is folded accordion style. This stack will then be placed between two rigid flat plates and a weight of 36 pounds applied for one minute. The sheet would then be opened and the creasing-under-weight process repeated, making the second series of four folds perpendicular to the original folds. A circular sample would then be cut from the center of this creased square and tested for moisture vapor transmission in the usual manner. In the same specification, a seam strength requirement is thought desirable, and the requirement proposed is that a 1 in. sample of the seam must support a dead load of $\frac{1}{2}$ pound for an hour when the test is conducted in a humidity cabinet operating at 100 deg. F. and 95 per cent relative humidity.

Paper and Container Conservation and Reclamation, by Frederick C. Barber, Containers Section, Office of Procurement and Materials, Navy Department

We must guard against over-simplification or reduction in use of packaging materials, since too great a degree of conservation may, in the long run, where damage is incurred, result in the consumption of a great deal of additional packing material, as well as a great waste of the far more valuable item that may be in the container. The Navy is making every effort to break down the packing of specific items as completely as possible, so that only those materials are used which are absolutely essential for particular shipping conditions and hazards. In new specifications, an entirely different type of packing method is specified for domestic shipment. Should it unexpectedly be necessary to ship some of the domestic-packed materials overseas, they can be over-packed.

Naval observers on the war fronts have found that for most of the shipments now being made in V-1 boxes, V-2 boxes will perform satisfactorily.

The Navy is making every effort toward re-use of containers and packing materials, particularly in the case of fibre boxes. The majority of wooden boxes do not lend themselves readily to re-use by the original contractor, due to their consumption of shipping space on the return; however, some worthwhile progress is being made in the field of collapsible wood boxes for such items as airplane engines, etc.

What the Quartermaster Corps Expects from Paper Products, by Maj. Robert R. Melson, QMC Subsistence Research Laboratory, Chicago.

Packaging of subsistence items for overseas shipment has made definite and welcome progress in the last year. A bag pack has been developed that offers almost unlimited opportunities for development. The "arsenal" type of wax-dipped box has been successfully applied in a number of instances. Many problems still are unsolved and performance requirements are being introduced into specifications, as far as is practicable, to provide a greater choice in materials.

Maj. Melson gave a progress report on 10 problems facing the packaging group of the QMC at the time of the TAPPI meeting a year ago:

1. The requirement of watertight shipping cases has been largely met by the use of watertight unit packages inside the case and by using watertight case liners in the form of bags.

2. Despite the presentation of a large number of new films, mostly of the laminated type, we have not reached our objective in water-vapor resistant sheets, but they have been substantially improved. The biggest development has been with materials which lend themselves to conversion into large bags, which enclose a number of unit cartons. The laminated bags thus being used on cereals and dehydrated soups and vegetables consist of creped kraft paper laminated to creped kraft paper using large amounts of asphaltic-type compounds.

3. There is not yet available a flexible packaging material which is proof against insect infestation, but recently very encouraging results have been obtained by incorporating a ply of sandpaper in the board from which cartons are made

4. The problem of packaging dried fruit having a moisture content of approximately 22 per cent, with protection from loss or gain of moisture, mold growth and insect infestation, has been partially overcome by reducing moisture content of the fruit to 12 per cent; this extra dry fruit is then packed in an "arsenal" type fibre box which is wax-impregnated and coated after sealing.

5. Comparatively little progress has been made in the direction of obtaining a wax paper sheet flexible at 20 deg. F. below zero and not excessively tacky at 130 deg. F.

6. Great progress has been made in the production and especially in the use of waterproof and water-vapor-resistant papers. Three types of watertight and water-vapor-resistant bags being specified today have greatly improved the Quartermaster Corps' overseas packages, with advancement noted in durability, flexibility, sealing and waterproofing.

7. Interesting work has been done toward the packaging of lard and other shortenings in flexible packaging materials, but all aspects of the problem have not been completely solved and in the meantime metal containers will continue to be used.

8. The project of prevention of transfer of oxygen through flexible packaging materials was in anticipation of requirements that did not develop and, due to more pressing problems, very little work has been done on it.

9. Water-vapor protection of fibre cans has been materially increased by including more and better water-vapor-resistant materials in the body and, in one instance, by including a lead foil in the plies forming the can body. It has been found that end seams can be made more securely watertight by treating the ends of the body with amorphous wax before seaming on the top and bottom, or by using a suitably treated outer water-resistant liner.

10. The question of making shipping cases proof against damage by rats has been considered, but little progress made.

In general, the "Commando" type bag offers one of the best opportunities for further advances. It combines water-vapor protection, watertightness, maximum use of present packaging machinery, simplicity and economical use of materials.

Certain types of round composite fibre cans are used for packaging dessert powder, cocoa, cocoa beverage powder, hard candy, baking powder and similar products, but the popularity of these containers has been decreasing because of the tendency of the can body to become disengaged from the metal ends. Attention is being paid both to rectangular composite fibre cans and bag-in-carton types of packages to replace them.

At present, two dehydrated vegetables—cabbage and carrots—are packed in hermetically sealed tin cans in an atmosphere of inert gas. Little if any work has been done on gas packing in flexible packages, and it is suggested that some information on this subject should be accumulated.

Paper Products as a Factor in Chemical Warfare Service Packaging, by *Lieut. Theodore P. Steinmetz, Technical Command, Edgewood Arsenal.*

Chemical Warfare Service packaging involves more than 1,800 items, including components which go into end items, weights varying from an ounce to 21 tons and including some delicate, fragile apparatus. Types of packing and packaging used include waterproof paper liners and bags for wooden shipping containers; greaseproof paper for parts and surfaces treated with rust-inhibiting oils; moisture and vapor-proof bags; various types of asphalt-impregnated laminated cylindrical containers; corrugated and solid fibreboard for cartons which are then overpacked in wooden containers; cushioning materials ranging from corrugated fibreboard to cellulose wadding; waste paper in the form of shredded or wadded newsprint, and asphalt-impregnated roofing paper for fully sheathed crates.

The most important use of waterproof paper is for box liners, using a 30-30-30 asphalt-laminated sheet meeting the requirements of Federal Specification UU-P-271. It is usually procured fabricated into a bag of the correct size for the particular box in which it will be used. This constitutes a first barrier against moisture; a second barrier is the moisture-resistant fibreboard carton used for interior unit packaging, and a third barrier is a moisture-vapor-proof bag often used around the unit package.

Asphalt-laminated cylindrical containers have been found excellent water barriers comparable to hermetically sealed cans. Some are also made vapor-proof for special cannisters by using 30-pound kraft for the final layer and dipping the sealed container in either micronized or paraffin wax. A typical individual container is that used for the 4.2 in. chemical mortar shell. It comprises an inner and outer convolutely wound tube. The inner tube is fabricated with a minimum of three layers of paper starting with a layer of .01 in. waterproof wood manila paper on the inside followed by a layer of .025 in. asphalt-impregnated kraft. The outside layer is .031 in. asphalt-filled waterproof chipboard. The outer tube consists of four layers as follows: one inner layer of .031 in. asphalt-filled waterproof chipboard; two layers of .007 in. waterproof duplex kraft wrapping paper; one outside layer of .004 in. asphalt-impregnated kraft cemented to the previous layer with asphalt. If the assembled container is to be wax-dipped, the final layer consists of 40-pound kraft. Container ends are 30-gauge sheet steel electrolytically zinc coated and flanged for roll crimping together with a sheet steel retainer.

All CWS packing of overseas items complies with U. S. Army Specification 100-14. However, it was found that simply inserting a clause in specifications to require such compliance rarely resulted in proper packing. Therefore, in most instances, the service now incorporates packing diagrams together with carton and box designs in drawings of an item. Specifications then require packing in conformance with these drawings and misinterpretation is eliminated.

Marking of Army Shipments, by *Capt. G. Wallerschein, Packing and Marking Branch, Port and Field Agencies Division, Office of Chief of Transportation.*

Capt. Wallerschein stressed the need for accuracy and legibility in coded overseas markings, and the necessity for leaving blank space for marking future trans-shipments. It is imperative, he said, that every box show weight and cube and carry a description of the contents. There is need, he said, for (1) an absolutely waterproof envelope for the packing list which can be securely attached to the case, and (2) for a better method of applying quick-drying service colors to boxes.

(For additional information on marking of Army shipments see MODERN PACKAGING, Oct. 1943, p. 60; this issue, p. 70.)

Requirements of Protective Papers for Ordnance Overseas Packaging, by *H. T. Holbrook, of the Packaging Staff, Field Service Division, Office of Chief of Ordnance.*

Ordnance is well satisfied to date with the greaseproof requirements in the present specifications, but certain difficulties have been encountered and suggestions are solicited. There has been evidence of oil preservative leakage through machine-made folds in Grade A greaseproof bags. Biggest problem, however, is the lack of sufficient materials; notably, the order eliminating the use of wax from Grade A wrapping material and restricting it to Grade C. Restriction even of

Mother knows best . . .

Today,
SHE BUYS
WHAT SHE
SEES



AND
SEES WHAT
SHE BUYS



IN Duraglas CONTAINERS

Take it from the women of America, Duraglas* containers have brought *permanent* changes to food buying habits.

At the store, Duraglas containers have made *sight selection* possible for an increasing variety of products.

At home, Duraglas containers afford conveniences that housewives want and appreciate.

It's clear to many food packers that these new buying conveniences have established Duraglas containers as tomorrow's packages . . . *here today*.

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TRADEMARK OF AN IMPROVED TECHNIQUE IN MAKING GLASS CONTAINER

the amount of micro-crystalline wax that can be used in Grade C wrappings is now under serious consideration and if done it probably will be on the basis of so much poundage or fraction of poundage per square yard. Ordnance would like to devise specifications permitting a 50 per cent reduction in the amount of wax per square yard. Some converters and fabricators have done a splendid job in conserving micro-crystalline wax and further conservation as regards Grade C wrappings is sought. Anything that will give a carton waterproofness is acceptable to Ordnance, provided only that the complete package will stand a cyclic exposure test and a rough-handling test.

There are great possibilities in the paper industry in developing waterproof materials that can be used to wrap cartons that will withstand the cyclic exposure test, thus relieving the wax situation. If materials have at least a 48-hour water resistance by the dry indicator method it is expected that they will withstand the cyclic and handling tests.

Ordnance needs waterproof paper for box liners which will have at least 48 hours' resistance, that will have a tensile of 25 at least, with an outer facing that will not deteriorate in the presence of high humidity or water, and that can be made up into bags the seams of which are equally water-resistant and of the same strength as the material itself. A new specification for waterproof adhesive to be used in sealing waterproof bags has been developed and the objective is to see that the seams are just as strong and waterproof as the material itself.

What Can the Engineers Expect of Paper Packaging? by
Maj. John C. Babson, Chief of Inspection Division, Procurement Branch, Office of Chief of Engineers.

Maj. Babson presented eight questions for the consideration of TAPPI members:

1. What type paper package can be provided for export shipment of camouflage nets of all types?
2. What type paper package can be developed for export shipment of insulation, wallboard and plywood?
3. What type paper package (sack) can be developed for export shipment of cement and fire clay?
4. What type paper container can be provided for export shipment of bituminous products such as roofing compounds?
5. What type paper container can be provided for export shipment of various chemical compounds such as calcium chloride?
6. What type paper container can be provided for export shipment of surveying instruments, transits, levels, alidades?
7. What type container or method of packaging can be developed for the export shipment of writing paper, office supplies and photographic film?
8. One of our most urgent needs is for a good, fast-setting, cold-type, water-resistant glue for our present packages.

Packaging Medical Supplies for the Army, by *James D. Studley, Chief, Packing Section, Distribution and Requirements Division, Office of the Surgeon General.*

The Army's medical package is not primarily designed for merchandising purposes; protection, accessibility and dispensibility are the major factors. The waterproof bag liner is an excellent example of protection of the medical product against water. Field medical items must be protected against both moisture and contamination, or they will be useless.

The first-aid packet, or battle dressing, must go through all kinds of weather, carried on the person of the soldier, and it must always be dry and clean. A year ago it was kept dry

by overpackaging in a tin, lipped box which was opened by peeling off the sealing strip around the lips. When tin became critical, the Army developed a plastic container of practically the same shape as the tin, but this did not prove satisfactory because of distortion with consequent leakage at the point of closure. The Medical Department then turned to fibre and developed the present pack, which is a compact, watertight, gas-tight package. An automobile has been known to run over it without damaging the dressing. The two sleeves on the outside of the package are required to take a load of 80 pounds for three minutes without collapse with the dressing removed and the bag package is required to take a load of 175 pounds on the seamless faces for five minutes, likewise without collapse. There must be no visible damage and the waterproofing features must not be impaired.

The wrap immediately surrounding the dressing is of 100 per cent sulphite imitation parchment of 45-pound basis weight and with a Mullen strength of 35. The laminated bag immediately surrounding this wrap is made of a 30-pound sheet of dense northern kraft on the outside, laminated with an asphaltic compound (minimum melting point 175 deg. F.) to a layer of lead foil .001 in. thickness. The foil is thermoplastically laminated to a cellulose base sheet of .009 in. minimum thickness, coated with a thermo-sealing compound to permit the envelope to be heat-sealed. The weight of the laminated sheet is required to be not less than 225 pounds and the bursting strength not less than 40 pounds. A coating of paraffin is placed on the kraft sheet of the envelope to repel water when the package is dunked or wet. The sleeves are of 25-point, dense, wax-impregnated kraft board, the overlaps being securely held with a waterproof adhesive.

Other items packaged in the kraft-laminated-to-foil wrap are the sulfadiazine tablet, benzedrine sulfate tablets, plaster of paris bandages and X-ray films.

A special problem is presented by the metal bushings, nipples, needle-valve and other replacement parts so important to the maintenance of the overseas hospital sterilizer. Each part is thoroughly cleaned and preserved in conformity with Army Specification 100-14A, Method I, following which it is tightly wrapped in a Grade C, Type I or Type II paper as detailed in Ordnance Specification AXS-840. A minimum of three layers of the paper is used about the part. Following this tight wrapping, the part is placed in an identifying kraft envelope. A set of the various parts so packaged is placed in an over-all foil-laminated-to-kraft envelope which is heat-sealed with a minimum of entrapped air. The whole is then dropped into a cloth bag of coated fabric which is tied to the sterilizer when shipment is made. The foil barrier method is used instead of the more orthodox dipping of the paper-wrapped items in XX wax because so many of them are small and difficult to handle.

With drugs, pharmaceuticals and biologicals, which include the oils, fluids, tinctures, elixirs, spirits, acids, alcohols, etc.; likewise the ointments, crystals, powders and pastes and the vaccines, antitoxins and stains, a standard packing method has been adopted. The item—whether in glass bottles, tubes or fibre cans—is packed in a corrugated-board box of 200-275-pound test, overpacked in a watertight bag liner and dropped into a wooden box of approved design.

The Class 2 items—gauzes, bandages, absorbent cotton and adhesive plasters—are cartoned and packed inside a V-board box with waterproof bag liner. The Medical Department would like, for all purposes, to have available a larger supply of effective bag liners and feels that there is room for improvement in this item, particularly in the direction of producing a high-test liner without the use of kraft fibres.

Eastman Acetate Sheet has so many essential wartime uses that its purchase is subject to government approval.

EASTMAN ACETATE SHEET *attracts • protects • sells*

However, after the war is won, you can count on Eastman Acetate Sheet to make important contributions to package improvement.

Chemical Sales Division

EASTMAN KODAK COMPANY, ROCHESTER, N. Y.

Packaging of surgical instruments has given almost no trouble to date. The non-standardized wrappings in which they are received and in which they are shipped are doing a good job against corrosion. However, the department is now considering a special corrosion-proof wrap which probably will be with a Grade C, Type 3 paper which is greaseproof, acid-free, non-corrosive and sealable.

Army Air Forces Packaging Problems, by Maj. R. A. Schmidt, Chief of Container and Packaging Control Branch, Wright Field.

Due chiefly to its complex administrative setup, the Army Air Forces have at present no more than a handful of detailed specifications covering packaging of complete items. Development of specifications and recommendations is greatly to be desired.

The chief problem in domestic packaging is with containers that meet the so-called Consolidated Freight Classification requirements. Specification 100-14A is to be preferred and the Air Forces plan to set aside the Consolidated Freight requirements, at least to the extent of restricting paper containers to a minimum of at least 250 pounds Mullen test. Beyond that, the exterior packaging requirement will have to be in conformance with those outlined in Specification 100-14A, excepting the requirements of a waterproof case lining.

The Air Forces are having difficulty with closures. Waterproof closures, adhesives and suitable tapes are a constant headache. Each carload of material opened at the depot will show failure of the domestic containers attributable to lack of those characteristics in those packages.

It is desirable to use steel strappings of wire around the cartons, bales and bundles. The emphasis is on more and better cushioning materials, also.

In the case of domestic shipments, the Air Forces are obliged to embark on a serious program of corrosion-proofing items in storage, attributable to failure to have included corrosion-proofing requirements in domestic shipment.

We have the suspicion that Method 2 packs of AN-P-12, using moisture-impervious films, are going out of control. We have set up machinery to control every Method 2 package that is in use in the Air Forces, and we would like to be informed at Wright Field of any contemplated package involving the Method 2 principle.

We plead for wiser application of the bag-box principle. We have suspicion that there is excessive dunnage in the packaging, resulting in unnecessary cubage, increased tare of the package and increased requirements for other packaging materials.

Water-Resistant Tapes for Export Packaging, by B. L. Trodson.

Two types of water-resistant sealing tapes, designated individually as Types A and B, have been developed to meet the packaging needs of the armed forces.

Type A tape consists of a wet-strength kraft coated one side with a resin adhesive that requires a special solvent to moisten. The tape has a waterproof bond, is impervious to extremes of temperature and to mold, and adheres to V-type board, metals, wood and other surfaces. Under test, the tape remained sealed to a V-type carton submerged in water for 70 days.

Type B consists of two sheets of kraft bonded with asphalt and coated one side with a special blend of animal glue. To obtain water resistance of the adhesive, this type requires moistening with special solvent and a 48-hour aging period after application to the package. The tape remains sealed

to carton when submerged in water for periods up to 100 hours; adheres to V-type cartons, 30-30-30 paper, etc., and will withstand both high and low temperatures.

Water Vapor Permeability Testing Session

Chairman W. H. Graebner, in his introductory remarks, suggested that the entire discussion on moisture-vapor testing—the conflicting methods and terminology—all boiled down to one primary problem: to determine accurately the performance that may be expected from a packaging material. He suggested, therefore, that the keynote of this session be the one word: "Performance."

The first speaker was Charles A. Southwick, Jr., technical editor of MODERN PACKAGING, who emphasized the importance of giving the armed forces, as well as civilian packaging, a common denominator of expression for moisture-vapor testing—a test which he declared was, in war time, second in importance only to that of the physical strength of the packaging material.

We have to "tailor make" packaging materials for war products, Mr. Southwick said, and the problem is complicated by the fact that there is no "common denominator" means of evaluating packaging materials.

Mr. Southwick stressed the point that paper itself has no inherent water-vapor permeability; this is obtained by adding materials different from the paper itself. Thus, control must be with the materials which are added: the coatings. The paper industry is going to do the research necessary to make better packaging materials; the aim is toward zero with non-metallic films in terms of their water-vapor permeability, he said. Any test method of five years ago is probably outmoded by the new requirements of accuracy and precision, and, in turn, any new method today may be outmoded in a few years.

He pointed out that water-vapor is only one form of transmission test; it is also necessary to measure transmission of fixed gases and of organic vapors, or flavor. All three of these tests can be reported in terms of grams per unit of area per unit of time. Therefore, there should be a standard unit to express grams per square meter per 24 hours—possibly the word "perm."

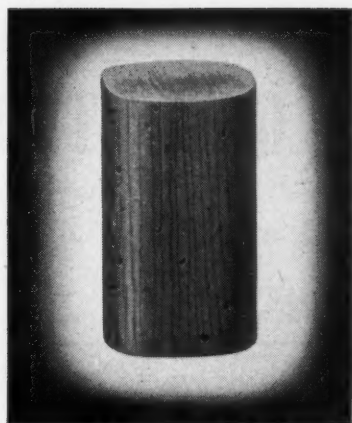
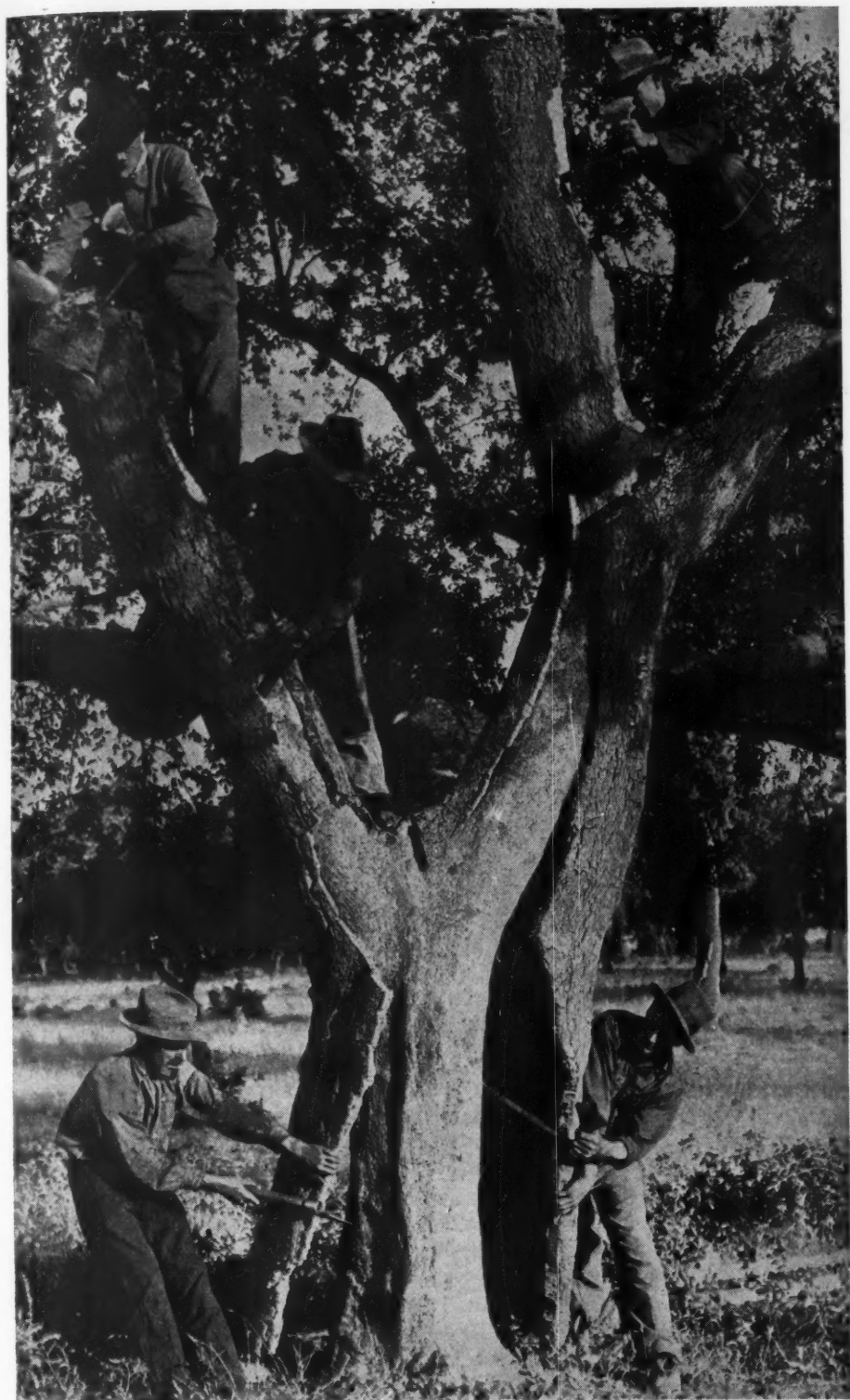
A flat or unit test of this kind is only part of the story, Mr. Southwick stressed. A material rarely is used in the flat in packaging; therefore, there is need for supplementary tests to give the various kinds of durability. The final evaluation of the material is in terms of its end use in the package. He suggested an outline of tests of properties which should be made.

First, Mr. Southwick listed the fold test, which would include both a flat fold and a dynamic fold test; second, he listed a test evaluating surface durability (resistance to abrasion); third, a test of the effect of stress on a sheet, and, fourth, a test for stability with age—the effect of oxidation, etc.

The inevitable result of a test pattern of this kind, Mr. Southwick said, will be the grading of packaging materials in terms of functions and characteristics, enabling the customer to buy selectively on the basis of performance. This attitude on the part of the customer is already evident and will increase, he said.

Mr. Southwick closed with a plea that the TAPPI technicians be not too rigid, not too precise in attempting to get some of the tests under way. He suggested that they accept tentative procedures, perhaps two or three tentative procedures, on the same subject.

Presented for discussion as one such tentative procedure was the paper by L. Boor and (*Continued on page 122*)



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QUESTIONS and

Answers



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Cellophane laminations

QUESTION: *We are interested in laminating cellophane to a 30-point carton stock for the manufacture of a greaseproof carton or tray. Can you give us any assistance in making this type of lamination?*

ANSWER: Laminations of cellophane and paper are difficult to keep flat and especially if they are to be used over a wide range of temperature and humidity conditions. This is especially difficult in the case of paperboards because of the stiffness of the board and the danger of splitting the film. Even with heavy stocks there is pronounced curl. These distortions are due to the difference in contraction and expansion of cellophane when exposed to various humidities as compared with the paper base. The laminated structure may lie flat at a given humidity, but when the humidity goes above or below this point, the tendency is to introduce strains in the cellophane and produce delamination—even breaking of the film. I suggest that you try glassine or parchment in place of cellophane because in this case, you will have two materials in which differences in humidity will not produce so severe distortions. The adhesives should be an aqueous type suitably plasticized to undergo the creasing and folding operations. Such board should be stored in a cool room at normal humidity (about 60 per cent) and time in storage should be kept to a minimum.

Fibre can for moisture protection

QUESTION: *Can you give me detailed information on how to make a fibre bodied convolute can for a very moisture sensitive product? This fibre can will have metal ends and a friction plug closure. The product is very hygroscopic and has a rather slow turnover on the shelf and in use, and we would like the maximum possible moisture protection in this fibre body. Can you also suggest a method of testing such a package, so that we may set up a control system for the packages we purchase?*

ANSWER: The following detailed specification gives you the information you require for making a fibre can body of the maximum water vaporproofness. Two types of convolute body are described.

- Type 1. The conventional convolute type consisting of multiplies of moistureproof body stock.
- Type 2. Consisting of a convolute body which has an inner lining or ply of a highly water vaporproof material with chipboard or similar body stock.

Type 1 can be made with the higher degree of water vaporproofness because it is possible to use from two to four plies of body stock, while on Type 2 the water vaporproofness is limited by the quality of the lining turn.

Convolute: Type 1. Two turns or plies of a special laminated board. This board consists of a chipboard of No. 3 finish or better combined to a glassine (not less than 20 lbs. per ream and with a turpentine penetration of not less than 600 sec.) with not less than 12 lbs. per ream 3000 sq. ft. of a waxy laminating agent applied as a uniform and continuous film. The body is to be wound with the glassine on the inside.

Type 2. A lining turn of a triple laminated sheet consisting of 3 plies of each not less than 20 lbs. basis weight combined with not less than 5 lbs. of waxy laminating agent at each interface, the laminating agent to be applied as a continuous and uniform film. The center and one other sheet of this structure shall be glassine having at least 600-sec. turpentine penetration. The other sheet shall have at least a high super calendered finish and shall not show stain as a result of the combining operation and shall be the side which is adhered to the chipboard body stock. This lining ply or turn is backed by sufficient plies of chipboard for strength.

An accurate and rapid evaluation of the moisture vaporproofness of a fibre can can be made by using an atmosphere at 100 deg. F. and 90 per cent relative humidity. The sample containers should be seasoned a few days after being made to remove the excessive moisture of the adhesive. The packages should then be filled comparable to commercial practice.

It is preferable for tests of this kind to use smaller sizes of containers for any large number of tests and in all tests not less than 12 packages of each kind should be used. The filled container should then be carefully weighed to the nearest tenth of a gram. A few samples from each lot should have the closures sealed with paraffin wax before weighing. Samples should then be placed in the humid atmosphere and weighed each week at the same time. The first week's increase in weight will include moisture gained by the product and also the moisture required to saturate the fibre of the body. Therefore, the first week's increase in weight is not an index of container performance. However, the second week's gain in weight is entirely moisture which has gone into the contents and therefore is a direct index of the relative moisture vaporproofness of different types of containers. It is necessary to continue the test until the product becomes unstable or unusable. A quick and sure evaluation of a container can be made in four weeks by ignoring the first week's weight gains and by using the total gain of the (Continued on page 124)



UNLESS YOU MOVE FORWARD

From the millions of electrons whirling around the nucleus of the tiny atom, to the immense, gyrating planets of our solar system, everything throughout the universe is in continuous motion.

Motion alone does not necessarily mean progress, however. An object—or a business—may be constantly in motion, yet moving only within a fixed orbit!

Never having been content to merely travel in circles, we have constantly endeavored to be progressive in our movements. It is thus only natural that we should become adept in the art of prodding tomorrow's possibilities with the performance of today.

Because of our unremitting search for faster, more efficient methods of improving the basic techniques of glass making . . . and because of our effort to incorporate the newest processing discoveries in the finished product as quickly and economically as possible . . . Carr-Lowrey glass has long been the choice of many of America's foremost manufacturers of drug, cosmetic, household and food products.

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Re-use campaign ties in with L-317

by R. L. Van Boskirk, Washington Editor

The Re-Use Campaign for all kinds of containers is finally underway. After months of hesitation and delay, the opening gun was fired at a meeting of industrial groups in New York on October 18 and this was followed by several meetings in large cities all over the nation where WPB representatives explained and promoted details and procedure.

What the men behind the campaign hope to accomplish, how they expect to do it and how it ties in with the container program was told in the article "Nationwide Drive Is on for More Pulp" in the September issue of MODERN PACKAGING. It seems important to point out once more that the Re-Use Campaign is to be kept on a strictly educational level—that is, there is no intention to issue orders or commands to do certain things. WPB is going to rely on a sense of patriotic duty among container users to aid the conservation campaign, but will constantly remind them that the only way they are going to get what they need is to make every possible use of old containers.

It is well to remember that the Re-Use Campaign is only a part of an over-all conservation campaign. The most potent parts are such things as Order L-239 which limits the kind of paper and quantity which goes into folding and set-up boxes and the new order L-317 which limits the use of fibre boxes. These may only be a mild foretaste of what will come later.

Slow getting started

One disturbing factor about the Re-Use Campaign has been the delay in getting it started. It has been started and stopped innumerable times since it was first proposed last summer. Officials have resigned over differences of opinion as to how it should be conducted.

A prominent factor in the delay has been a fear by prominent officials not in the Containers Division that the public would react unfavorably as they did after the first salvage campaign early in the war when more waste paper than could immediately be used was collected and aluminum stood in vast scrap monuments all over the country. The American public is impatient—it could see no reason why scrap paper and aluminum shouldn't be immediately converted into new products and the Government was apparently incapable of educating the public that it took time. The paper folks were also perturbed because at that particular moment their warehouses were overflowing with unsold stocks and they didn't need scrap. Today the situation is entirely different, but there are still some officials who see a bogey in possible criticism.

Furthermore, there is active opposition to the campaign by a few fibreboard box manufacturers, one of whom said: "The way to save used boxes is to macerate them and make new boxes." There is a feeling that it is practically impossible to make used boxes serve as shipping containers in any appreciable amount. Railroad men, already plagued with scores of shipping problems, chorus, "Amen."

Despite the criticisms and the sniping, the Containers Division is going on with its program. They no doubt figure that containers will soon be so short that users will

either have to save their old ones or go without in a great many cases. Necessity will force cooperation.

The program calls for voluntary participation of the business elements concerned. As between the original form and the final plan, there appear to be certain pertinent omissions, notably provision for a definite method of handling re-used containers. Containers Branch was apparently not impressed with the need for a definite commercial set-up to re-market used containers and they have placed their first reliance on an educational campaign throughout industry. It remains to be seen whether this omission will be serious. However, as was remarked editorially in these columns, any plan for conservation of needed material deserves the whole-hearted cooperation of everyone concerned.


Meanwhile, reports are that such associations as the soap and glycerine group are working out the details in a test campaign being conducted in Chicago. Certain legal angles, price controls, etc., must be properly settled before this campaign can be completely launched. But here is one group at least which is endeavoring to cooperate in a practical way to set up specific machinery for implementing the program.

Public refuses to be excited

Unfortunately, it seems that a great portion of American citizens have refused to get excited about the container shortage. There is no glamour in boxes. No one worries about them until he suddenly discovers that he can't buy or sell a product because there is no way to package it. Insofar as the container situation is concerned, the following conversation in a taxicab illustrates a too common viewpoint. Said the big business man to his cab companion: "My God, this is unheard of. I read this order to mean that we couldn't have containers. Think of it! Couldn't distribute or sell our product just because we didn't have a box to ship it in. Imagine that! Putting us out of business because we can't have boxes. Who ever heard of such a thing?" Said to say, that is too prevalent an idea. Somehow, the Containers Division is supposed to provide containers, no matter whether the contents are plaster-of-Paris toys, poker chips or blood plasma.

It seems most difficult to convince many persons except container manufacturers that there is a shortage. Consequently it is possible that the campaign may accomplish great good in arousing the attention of a heretofore unbelieving audience.

Of course it isn't strictly true to say that no users have done anything about the container shortage. Several examples have been cited during the campaign to show how various companies have bent every effort to ease the situation. A notable case is the Wrigley Co.'s letters to its distributors offering to pay five cents for every returned, usable container, giving instructions on how to open them without damage and return shipping instructions. Another notable example is the Curtis Candy Co., which for two years has been asking their franchise holders (Continued on page 120)



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It's a great job the packers of America are doing . . . and here at Crown we are proud to be sharing in that job by supplying so many of the containers which travel to so many places around the globe.

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WASHINGTON REVIEW

by R. L. Van Boskirk

● **Fibre Shipping Containers Limited**—Perhaps one of the most important orders affecting the container industry is Order L-317, Oct. 11, which limits the manufacture and use of fibre containers. It prohibits manufacture of bottle and can carry-outs, counter boxes, display shippers, laundry boxes and laundry shells, and retail gift boxes. It prohibits use of fibre containers for certain products and restricts use of containers to another list within a certain percentage of former usage.

L-317 controls the manufacture and use of new fibre shipping containers, including boxes, crates, cases, baskets or hampers made wholly or in part from corrugated or solid fibre of .060 gauge or heavier. It also covers interior fittings and sheets or rolls used for packaging or protective purposes made from the same material.

Order L-317 operates by:

1. Prohibiting the manufacture of certain types of unessential fibre containers such as bottle and can carry-outs, counter boxes, display-shippers, laundry boxes and shells, and retail gift boxes.

2. Prohibiting entirely the use of new fibre containers for packing certain products including advertising displays, posters, catalogs, and magazines including house organs; certain fresh vegetables; specified building materials, textiles, clothing; hardware, glass and leather products, and some horticultural items.

3. Restricting the amount of new fibre containers which may be used quarterly for packing other products to weighted quotas of 65 and 80 per cent of use in the corresponding quarter of 1942. The restricted lists include cosmetics and perfumes, flowers, games, toys, jewelry, ornaments and certain paper products held at 65 per cent quota, and many other articles and products including dry animal foods, beverages, books, furniture, china, clothing, and paints restricted to 80 per cent of the 1942 base quota.

The use of new fibre containers for retail deliveries after October 1 will be limited to 80 per cent of quota for mail orders and 65 per cent for other methods of delivery.

As the new restrictions apply mainly to the manufacture and use of new fibre containers, it is believed by the Con-

tainers Division that a part of the impact of the limitations imposed can be easily absorbed, if users will resort to utilizing used containers or other types of packing.

The most important part of the order perhaps is the section relating to inventory control. There has never been an accurate estimate of the volume of containers on hand and this order attempts to get at that figure by requiring a strict report from all users. It forbids a maximum inventory of more than one and one-half carloads, but provides an escape clause so that a manufacturer can make adjustments if he happens to run short on one particular size.

Users or dealers who do not use more than \$500 worth of new containers a year are exempt from the restrictions of the order. Likewise containers used for shipments to the Army, Navy, (exclusive of post exchanges), the Maritime Commission, the War Shipping Administration and Lend-Lease are exempted from the use and quota restrictions. Finally, specified exemptions are made for containers in the user's hands or in transit to him on the date of the order.

V-boxes, intended for United States Military and Lend-Lease uses, may not be utilized for other purposes.

For a further discussion of this order see the article "Re-Use Campaign Ties In with L-317" on Page 106.

● **WPB Has New Forest Products Bureau**—With Harold J. Boeschstein at the head, a new Forest Products Bureau has been set up as a division of WPB, to handle wood pulp, paper, paper products and lumber. This amounts to a revival of the old Commodities Bureau of WPB, with the addition of the lumber and lumber products divisions. WPB's hope is "to establish a closer coordination of pulp wood with other forest products." A further hope is to increase output of woodpulp and paper.

The Pulp and Paper Division has now become two units under new heads (Paper Division and Paperboard Division). Former director Arthur G. Wakeman of the Pulp and Paper Division is now assistant to Boeschstein. Rex Hovey, on leave from Oxford Paper Co., as head of the Paper Division will handle all paper and converted paper products. G. G. Otto, president of Alton Boxboard Co., as

head of the Paperboard Division will administer problems in kraft, paperboard and boxboard, solid fibre containers, corrugated paperboard containers and folding boxes, as well as container and boxboard matters which Containers Division has been handling.

Harry M. Bitner will continue head of the Printing and Publishing Division under the new bureau. E. F. Tomiska continues as head of Containers Division, to handle containers other than those of paper and paperboard.

Agner B. Hansen, former deputy director of the Pulp and Paper Division, will manage pulp production under Boeschstein's supervision. David Graham, former head of fibrous materials in the Pulp and Paper Division, will now handle pulp allocation.

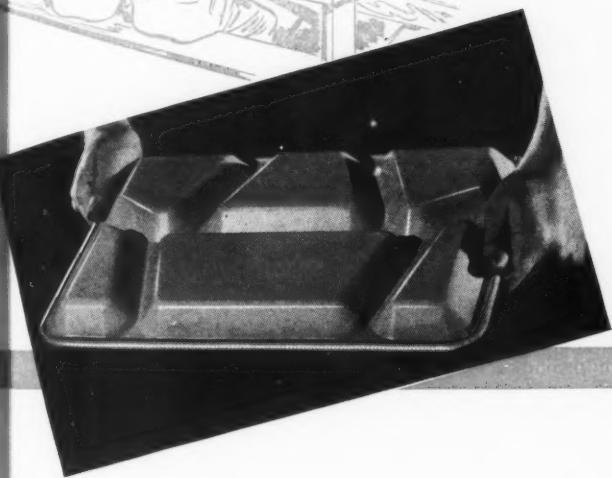
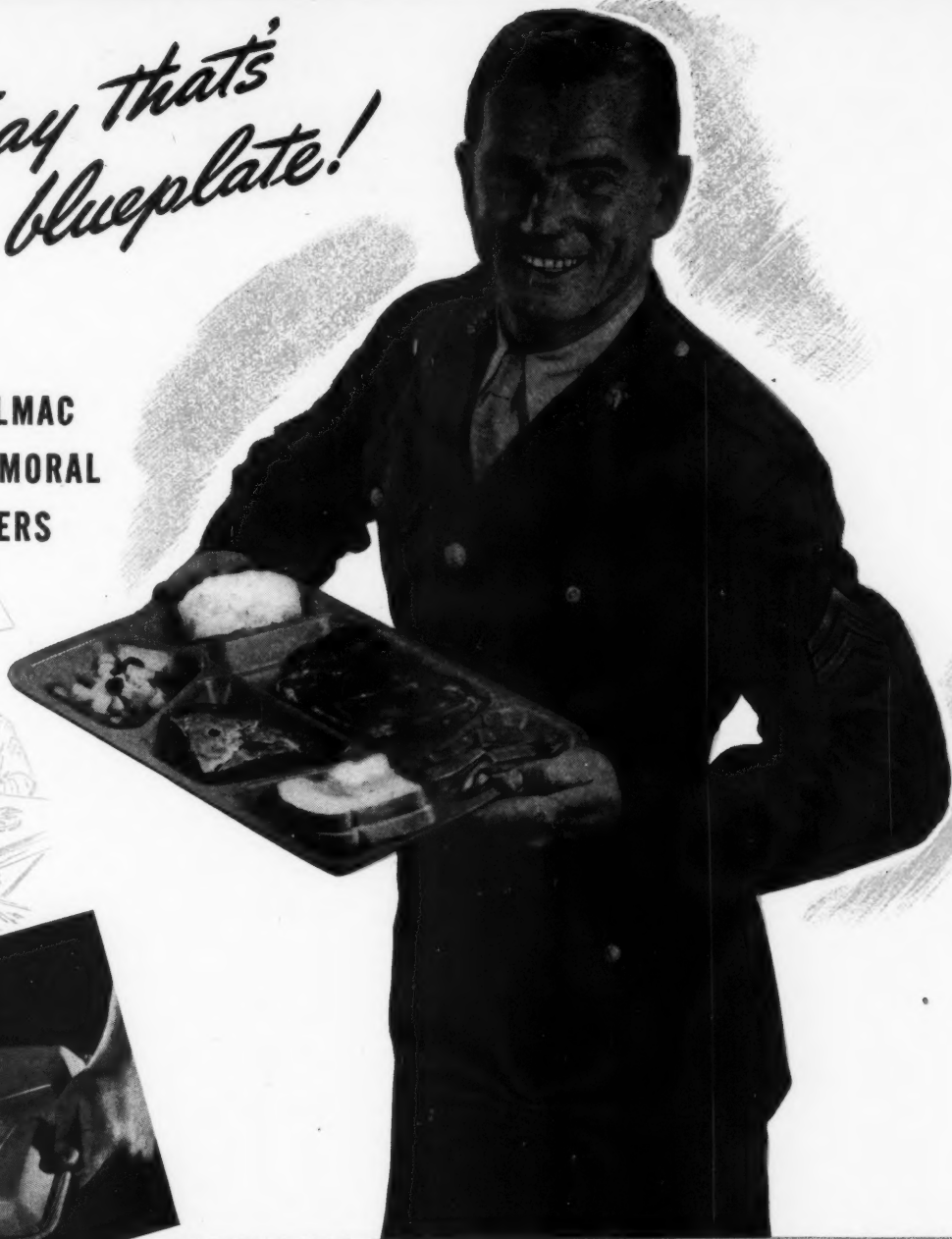
● **M-351 Restricts Manufacture and Use of Wax Paper**—Consultations of the Pulp and Paper Division of WPB with the Department of Agriculture, the War Food Administration, the Petroleum Administration for War and the WPB Chemicals Division have resulted in the issuance of General Conservation Order M-351, which prohibits the manufacture or use of waxed paper for the commercial packaging of several products and, in addition, establishes conservation restrictions on the type and weight of paper and amount of wax in connection with certain usages of waxed papers which are restricted but not completely prohibited.

Order M-351 takes the pressure off M-241-a (Conservation of Paper and Paperboard) so far as waxed paper is concerned and will make a little more paper available. By cutting down the maximum weight through the conservation restrictions established on the type and weight of paper and reducing the amount of wax used for each type of paper in accordance with restrictions of M-351, the order permits more waxed paper to be produced on an area basis, and, therefore, tends to take care of increased demand.

Thinner paper will increase the paper available under waxed paper limitations of M-241-a, which restricts manufacture of waxed paper to 110 per cent of 1942 production. And even with a saving in the total tonnage of paper and the total quantity of wax used, by area, the amount

The Army Tray that's Really a blueplate!

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of waxed paper produced might be raised to something like 125 per cent.

The requirements of Order M-351 apply to all manufacturers, sellers and users of waxed paper, but its use is unrestricted when less than 200 pounds per month is consumed.

Inventory restrictions are fixed at 90 days' supply, except that when waxed paper is specifically manufactured for him, a user may accept delivery if it will not increase his total supply beyond that adequate for 120 days.

Among the specifically prohibited uses which are entirely commercial packaging are double wrapping of bread, except crackers and biscuits; cereals, sugar, and salt; butter and oleomargarine, as carton overwrapping; and candy, soap and chewing gum. Bottles and canned goods may not be wrapped in waxed paper either with single or laminated sheets, under the terms of this order.

● **Recent Revisions in M-241-a**—Certain technical revisions and adjustments of General Conservation Order M-241-a, covering converted paper products, were announced by the War Production Board October 5.

Instead of specifically prohibiting the manufacture of a number of paper products, a general provision now permits the manufacture of all unlisted paper products at 65 per cent of the 1942 quota.

A limitation on inventories to two carloads or 30 days' supply of pulp, paper or paperboard is fixed effective January 1, 1944.

Among other changes were redefinitions of certain products not considered as converted products and not controlled by Order M-241-a but covered by other WPB orders. They include fibre shipping containers of several types and parts thereof; specialty bags, as well as grocery, variety and notion bags, and loose-leaf binders.

● **Materials Affected by Reg. No. 16**—Several packaging materials are affected by a WPB amendment to Priorities Regulation No. 16, providing machinery for appeals from limitation orders. Among the orders on which appeals must now be filed with the field office of WPB in the appellant's own district are the following: L-20 (cellophane), M-54 (thermoplastics), M-241 and M241-a (paper and paperboard) and M-286 (paper, specialties and glassine). Appeals from other orders should continue to be directed to the Appeals Routing Unit, WPB, Washington 25, D. C.

● **Glass Containers**—The glass situation was pointed out by E. F. Tomiska, Director of the Containers Division, when he gave notice that the restrictions under L-103-b probably would be continued until the end of the year, although it was originally intended to expire October 31.

It had been expected that curtailment

of production of a number of items during the summer months would provide sufficient glass containers to take care of the food program developed by the War Food Administration. But figures indicate that demands for glass continue to exceed productive capacity and the quota restrictions on such things as cosmetics and tobacco probably will be continued until the end of the year.

The first amendment to L-103 (Standard Glass Containers) was issued September 23, 1943. Several new types of standard glass containers were specified. Use of the new standard sizes is *not* compulsory, but it is hoped that manufacturers will be encouraged to make the new standard molds so that users of these bottles in the prescription and proprietary fields may order them when their old-type bottles are used up.

Another feature of the amended order is a change in the exemption clause concerning shipments of bottles outside the continental United States. Bottles may now be shipped outside the country without regard to the limitations of the order, provided they are made from molds of a *design* which was in existence prior to May 11, 1942. Previously, this exemption applied only to bottles which were made from *molds* which were in existence on May 11, 1942. Many of the molds have since become worn out. Furthermore, this provision is clarified to emphasize the fact that it exempts only glassware which is exported in an empty condition.

● **Pulpwood and Paper Situation Still Clouded**—According to a WPB announcement, the pulpwood supply picture is improving. August deliveries, as compared with July, were up slightly over seasonal, but still substantially below 1942 and 1941. During the first half of 1943, pulpwood receipts were 24 per cent under those for the corresponding period in 1942. Most noticeable upswing in August was in the South. WPB is apparently counting on its publicity campaign in 700 communities to render an appreciable aid.

In an effort to decentralize the pulpwood activities in WPB and expedite production, seven regional aides charged with the responsibility of stimulating pulpwood cutting in the United States and Canada have been designated.

The proposal to use prisoners of war and Jamaican and Bahaman laborers in pulpwood cutting is being explored by WMC and other government agencies. However, there are plenty of difficulties to overcome.

There has been considerable talk about a plan to allocate pulp and containers according to a system of products essentiality, but no one can be sure until Mr. Boeschstein has spoken. There has been a great deal of opposition to this plan because no one is desirous of taking the responsibility of determining the comparative essentiality of various users. In so

far as containers are concerned, there seems to be a definite feeling that they should be allocated according to the rating of the product for which they are used and that pulpwood for containers should be allocated on a block basis rather than on products essentiality.

● **Steel Drums More Critical**—Steel drums will be even more scarce than they have been heretofore, due to increased demand, WPB warns. Some additional steel may be made available through the use of cold-rolled steel sheets.

Almost immediately following this announcement, WPB reported an amendment (Oct. 2) to Order L-197 covering steel shipping drums and the revocation of M-255 which controlled the allocation of new steel drums, the provisions of the latter having been incorporated in Order L-197.

The purpose of the amendment is to eliminate a good portion of paper work and provide a more positive control over use of steel drums.

Under the old system, a man who wanted to ship a restricted product in steel drums first had to get an exemption from L-197. If the appeal was granted he then had to make an application to purchase the drums. He also had to have a rating to serve on his supplier and filed a PD-1-A. In short, if his product was restricted, he was required to file three forms in order to get new drums. If not restricted, he filed two forms—the application for authorization and the application for priority.

With the merging of L-197 and M-255, he must now file only one set of forms if the application is granted. On the new form, WPB 3233, the applicant is not only authorized to purchase and use the drums, but his rating is also defined on the same form.

One provision states that no drum used for shipment of edible products can be used for any other product until it is no longer useful as a food container.


● **Set-Up Box Advisory Committee**—Eleven officials of paper box manufacturing firms have been named by the OPA to serve on its Set-Up Paper Box Industry Advisory Committee. Members are: Albert Bond, Consolidated Paper Box Co., Somerville, Mass.; Walter E. Trum, Gerbereux, Dufft & Kinder, Brooklyn, N. Y.; Charles H. Sprowles, Sprowles & Allen, Philadelphia, Pa.; Laurence Pollock, Pollock Paper & Box Co., Dallas, Texas; Albert S. Daniel, W. C. Ritchie & Co., Chicago, Ill.; Fred Zur Schmiede, Kentucky Paper Box Co., Louisville, Ky.; R. J. Lowe, F. N. Burt Co., Inc., Buffalo, N. Y.; E. E. Fairchild, E. E. Fairchild Corp., Rochester, N. Y.; Paul A. Clement, Atlanta Box Factory, Atlanta, Ga.; Mark Nolan, Keystone Box Co., Pittsburgh, Pa.; Harold S. Fuller, Bucknell & Fuller Paper Box Co., Boston, Mass.

ONLY THE BEGINNING

This year's bumper farm crop would be of little use to humanity in the form in which it is delivered to the elevators, the canners and the packers.

Growing this food is only the beginning of processing, packaging and shipping operations that are complex enough at any time — but doubly difficult to-day with so many substitutes and shortages. In meeting these increased problems, the food industry has done a really remarkable job — assuring our government that the nation's food supply will be properly preserved, ready to use whenever and wherever it may be needed.

Riegel mills and laboratories have been working full time to help meet the new technical requirements and the increased demands of the food industry. This has necessarily limited our ability to supply all our customers with all they want, but when it's over we will come to you with a wealth of experience and countless new products. In the meantime, if you are tackling post-war problems now, you will find us ready, willing and able to help you.



RIEGEL PAPER CORPORATION

112 MADISON AVENUE • NEW YORK 17, N. Y.

U. S. patent digest

This digest includes each month the more important patents which are of interest to those who are concerned with packaging materials. Copies of patents are available from the U. S. Patent Office, Washington, at ten cents each in currency, money order or certified check; postage stamps are not accepted.

FIBRE CONTAINER. N. Pelosi (to American Can Co., New York, N. Y.). U. S. 2,328,579, Sept. 7. A fibre container comprising integral folded side wall members adhesively secured at their meeting edges in a side seam to constitute a tubular body.

TRAY. M. Lichter (to Stickless Corp., New York, N. Y.). U. S. 2,238,563, Sept. 7. A combined ash tray and coaster for glasses which comprises a shallow cup-shaped main body portion die-cut and die-scored from an integral blank of fire- and water-resistant treated paper stock.

BREAD WRAPPER. T. C. Sheerin (to The Cuneo Press, Inc., Chicago, Ill.). U. S. 2,328,688, Sept. 7. A bread wrapper comprising an inner band of flexible material of predetermined width adapted to encircle a loaf of bread centrally thereof, and an outer wrapper, free of said inner band, said outer wrapper having ornamented areas spaced with respect to each other.

DRINKING CUP ASSEMBLY. J. J. Bauman (to Kurz-Kasch, Inc., Dayton, Ohio). U. S. 2,328,543, Sept. 7. A cup assembly, comprising two pairs of relatively large cups and two pairs of relatively small cups, each pair of cups comprising one cup nested within a second cup of slightly larger size, the smaller being located within the larger.

PACKAGING MACHINE. R. W. Vergobbi (to Pneumatic Scale Corp., Ltd., Quincy, Mass.). U. S. 2,328,758, Sept. 7. A packaging machine with a carton-supporting means arranged to support a carton with its top flaps extended outwardly.

METHOD OF PACKAGING COMPRESSIBLE COMMODITIES. J. Yates (to Pneumatic Scale Corp., Ltd., Quincy, Mass.). U. S. 2,328,766, Sept. 7. The method of packaging a compressible commodity in an amount normally occupying a space greater than the capacity of the package.

PACKAGE OPENABLE BY TEARING. L. L. Salfishberg (to Ivers-Lee Co., Newark, N. J.). U. S. 2,329,360, Sept. 14. A package comprising superposed layers of packaging material which is difficult to start tearing from an edge, said

layers forming between them a commodity-containing compartment one margin of which is formed by a sealing flange in which the edge portion of said layers of packaging material are sealed together.

SANITARY MASTER TUBE FOR SHIPPING AND DISPENSING ICE CREAM CONES FROM INDIVIDUAL ENCLOSED TUBES. G. G. Buttermann, Louisville, Ky. U. S. 2,328,615, Sept. 7. A sanitary master-tube of square cross-section adapted for shipping and dispensing ice cream cones from individual enclosed tubes, made from a conventional die-cut piece of cardboard provided with a long side-lap for attachment in forming said master-tube.

ENVELOPE OR THE LIKE. A. I. Kegan, Chicago, Ill. U. S. 2,329,055, Sept. 7. An envelope comprising a flap portion, a tab on said flap, and a coating on said body portion adapted to make contact with coating on said flap, coating containing sufficient rubber repeatedly to seal each other on dry contact containing sufficient moisture-activatable adhesive to seal permanently.

SURGICAL DRESSING UNIT. H. Ganz (to Johnson & Johnson, New Brunswick, N. J.). U. S. 2,329,262, Sept. 14. A surgical dressing unit comprising a surgical dressing, a sealed wrapper surrounding said dressing, and a rip-cord within said wrapper co-extensive with the length of said wrapper.

FASTENING DEVICE. J. F. Cleary, Kansas City, Mo. U. S. 2,329,335, Sept. 14. In combination with a container a closure therefor, an abutment on one side of the container, an anchor member fixed to the container below said abutment, a tape having one end engaging said closure and extending across said abutment to be looped around the anchor member.

EXPANSION SHIPPING CONTAINER. H. T. Snyder (to T. W. Holman, Seattle, Wash.). U. S. 2,329,444, Sept. 14. A device comprising two face members; two edge members connected with said face members and folded inwardly and between said face members, an adhesive means is carried by one face member positioned adjacent said fastener means.

DISPLAY PACKAGE. J. W. Trew, Gettysburg, Pa. A package wrapper of fibrous material being initially cruciform to provide flaps, said flaps being of a length to overlap, with adhesive laminations extending along the outer end marginal portions of opposed flaps.

COLLAPSIBLE BOX STRUCTURE. N. Gladstein, Bronx, N. Y. U. S. 2,329,605, Sept. 14. A collapsible box structure with top and bottom members and at least one longitudinal peripheral member in engagement with the former members, locking means arranged with all members and uniformly spaced.

CONTAINER. F. W. Lanigan (to Dewey & Almy Chemical Co., North Cambridge, Mass.). U. S. 2,329,628, Sept. 14. A carton formed by flaps integral with the side and end walls and adhesively secured together.

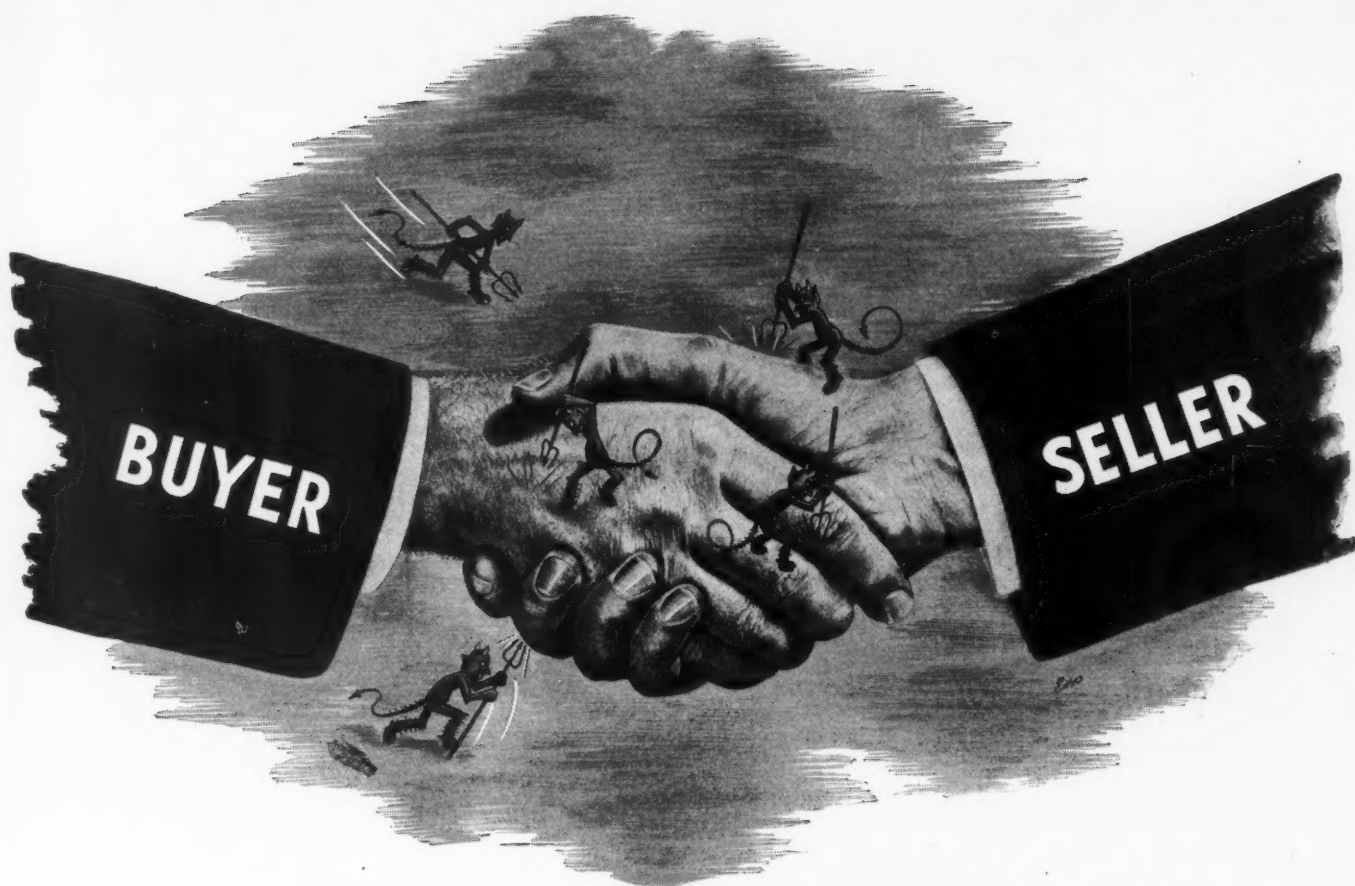
CHICK BOX. K. I. Miller, Lancaster, Mo. U. S. 2,329,637, Sept. 14. A chick box with side walls, and shelves on the lower portion of said walls and a bottom supported by said shelves in a position above the bottom with a partition subdividing the interior of said box.

CARTON PREPARED FOR RECLOSING. J. H. Strack (to The Gardner-Richardson Co., Middletown, Ohio). U. S. 2,329,797, Sept. 21. A carton with a top closure means comprising parts articulated together and to the side walls which permit inward folding bellows-wise to form a prismatic top.

CONTAINER. J. S. Stokes (to Stokes & Smith Co., Philadelphia, Pa.). U. S. 2,330,015, Sept. 21. A multi-ply container comprising at least two nested, substantially rectangular tubes flattened and attached to each other at their opposite ends to form seals and define opposite end walls of the container.

CIGARETTE PACKAGE. W. A. Schweiker, Des Moines, Ia. U. S. 2,330,150, Sept. 21. A cigarette package including an inner layer of material having its upper side and end portion folded inwardly over the top of the package in overlapping positions, and an outer layer of material terminating at the top of the package.

CIGARETTE CONTAINER. J. H. VanSickels (to Imperial Tobacco Co. of Canada, Ltd., Montreal, Quebec, Canada). U. S. 2,329,866, Sept. 21. A cigarette container comprising a rectangular outer case open at top and bottom and a one-piece rectangular dispensing slide of the folded blank type arranged in said case so as to be a close sliding fit therein.



...divided we fall!

A THOUSAND devils beset the buyer-seller relationship today . . . restrictions, allocations, shortages, delays . . . but we must not, we cannot lose our grip.

The delicate equilibrium of American enterprise, during these troublesome times, lies in our grasp. If we fail now, all is lost . . . the value of past relationships and the opportunity of quick post-war adjustments.

Only tolerance and understanding can hold the tie that promises re-employment to our boys overseas. It takes a *WILL* to hold on . . . *GOODWILL!* Will you lend a helping hand?

NATIONAL ADHESIVES

DIVISION OF
NATIONAL STARCH PRODUCTS INC.

820 GREENWICH STREET, NEW YORK 14, N. Y.

CHICAGO

— PHILADELPHIA

— BOSTON

— INDIANAPOLIS

— SAN FRANCISCO

Equipment and Materials



PACKAGE FOR CUTTING TOOLS

A new method of protecting fine cutting tools, both in shipment and storage, has been developed by the Robert H. Clark Co., Los Angeles, for use on its own line of tools. The Clark company does not sell the containers but merely recommends them to other tool manufacturers who may have packaging problems.

The lightweight Clark container, employing two soft wood blocks in a cardboard box, uses no critical materials. One wood block is drilled to serve as a base for the cutting edges of the tool, while the other is drilled to fit the shank. The two blocks hold the tool snugly in the cardboard container during shipping and also permit the container to be used as a handy tool-crib stand for protection during storage. In storage, the container works either as a complete box, or by removing and using the tool-crib block alone. Both the shipping container and tool crib block are labeled to aid in quick identification.

Of particular interest is the novel use of the box exterior to portray, with photographic reproductions, a number of the uses for Clark cutting tools.

IMPROVED HEAT SEALER

Pack-Rite Machines, Milwaukee, announces an improvement in design of their E-Z Sealer, used to crimp-seal heat-sealing bags. The new foot-pedal operation, consisting of a wood treadle-type pedal with heel rest and centrally balanced chain, is said to incorporate the following features: (1) Greater sealing leverage with (2) a minimum of effort by the operator; (3) wide treadle surface, and (4) heel rest which help to eliminate fatigue; (5) wide hinge for simplified installation and uniform operation, and (6) use of less-vital material.

Pack-Rite also announces a new multi-use sealer. Originally developed for the meat industry to seal pinch-type and overlapping sausage bands, the machine now has many other applications, the company stated. Three sealing stations are incorporated for: (1) whisking the flat back of sealer over tops of bags, pouches, packages, materials, labels; (2) applying the flat, heated top to heat-sealing materials for accurate spot sealing, and (3) slipping heat-sealing materials under the spring clip for pinch-type bands, ends of materials, tops of bags, envelopes. A 3-heat switch and heavy-duty heating element provide for sealing any type of heat-sealing material at various temperatures.

The unit plugs into any A.C. or D.C. light socket. The makers say it can be operated with the ease of a paint brush. Provided with an 8 ft. cord, the sealer can be brought directly to the package. A table or wall clamp is obtainable as optional equipment to hold the sealer in any preferred position. A wing nut makes for easy set-up and removal.

NEW WRAPPING PAPER FOR WAR PRODUCTS

A new protective wrapping paper, designed particularly for metal war products, is announced by the Central Paper Co., Inc., of Muskegon, Mich. Use of a newly developed chemical is said to make this laminated paper wax-free while at the same time imparting unusual acid-free, non-corrosive and grease-resistant properties, combined with great flexibility and strength for wrapping heavy and irregularly shaped articles. The paper is obtainable in heavy weights for heavy-duty lining, and it is also made in a crinkled form which is said to impart "breathing" as well as cushioning qualities. It can be machine-creped for unusual flexibility, tear resistance and shape conformity. The material is said to meet various government specifications, including the new U. S. Army Ordnance Specification AXS-840, Revision No. 1.

FLUX FOR TAPE MOISTENER

A new chemical product added in small amounts to the water used in moistening gummed tape is said to make the tape stick better and faster, particularly in cold weather. A teaspoonful of "Aquaflux," made by International Products Corp., Trenton, N. J., when added to a quart of water in the gummed-tape dispenser will assure even distribution of moisture over the glue surface and make it soft and varnishy instantly, it is said.

PACKING-LIST PROTECTOR PLATE

Too late for inclusion in the article "Tools for Marking Overseas Shipments" comes word of a packing-list protector plate of fibre made by the Western Paper Goods Co., of Cincinnati. The waterproof .080 in. plate complies with Army specifications, which now require that two packing lists be attached to the outside of every export shipping case which contains items of more than one kind.

Center of the plate is concave to allow room for papers and still permit the entire circumference of the cover to lie flat and secure. Eyeletted packing list envelopes are not needed under these protectors. The words, "Packing List," are large and deeply embossed on the cover.

TAG TACKER

Burgess has brought out a new Model P tacker which is said to have an effective jam-control mechanism. In addition to use for tagging crates of eggs, meats and other products in cold-storage warehouses, the aluminum plunger-type machine is said to be finding wide acceptance in ordnance plants, cantonments and other war plants for export labeling. The new model features a soft rubber cap and generally light, trouble-free construction to reduce fatigue.

COLOR FOR THE LAYMAN

General Printing Ink Corp. has issued a 21-page booklet describing the two major systems of color—the creations of Albert H. Munsell and Wilhelm Ostwald. The treatment is non-technical and should enable the average layman to apply these systems to his own needs. Copies of the booklet are available on request to the General Printing Ink Corp., 100 Sixth Ave., New York 13, N. Y.



FROM COLORFUL CANDY CANS TO BOMBS

TODAY, the Heekin men who produced the beautifully lithographed metal packages that carried your merchandise to a peace time market, are producing metal packages that carry bomb assemblies to our enemy. The same Heekin specialists who built superior containers for so many items...from candy to tobacco...from oil to crackers...from chemicals to shortening...produce millions of metal containers that are needed to carry flares, provisions, rations, et cetera to our men in service. Tin does it better. THE HEEKIN CAN COMPANY, CINCINNATI, OHIO.

HEEKIN CANS
Lithographed
WITH HARMONIZED COLORS

Plants and People

Toilet Goods Association, Inc., following a recommendation of its last annual convention, has established a Scientific Section which will broaden and expand the work previously done by the Scientific Advisory Committee, as well as part of the work of the association's Board of Standards. H. D. Goulden, director of the association's Board of Standards, has been appointed temporary chairman to serve until the 1944 annual convention.

Plans are being formulated for a special meeting of the Scientific Section. It is expected that this initial meeting will be arranged for January. To assist Mr. Goulden in developing plans for this special meeting, a temporary program committee has been appointed, consisting of Dr. Frederick J. Austin, of Hudnut Sales, Inc.; Dr. H. Coutinho, of George W. Luft Co.; L. B. Dobie, of Bristol-Myers Co.; J. R. Martin, of Coty, Inc.; Dr. E. C. Merrill, of United Drug Co.; and Dr. K. L. Russell, of Colgate-Palmolive-Peet Co.



R. C. Taylor

R. C. Taylor has been elected a director of the American Can Co., Inc. Mr. Taylor will continue as vice-president in charge of manufacture, which position he has filled since 1940. He makes his home in Greenwich, Conn., and commutes daily to the New York offices of American Can, where he has been located since 1934.

Dr. Charles Thom has been recalled from retirement by the U. S. Department of Agriculture with a view to giving additional help to canners operating under Continuous Factory Inspection. Dr. Thom, an eminent bacteriologist, before his retirement was a Division Chief in the Bureau of Plant Industry.

He will make such suggestions as seem appropriate for the improvement of housekeeping and sanitation. It is not expected that he will carry any administrative duties.

Robert E. Wright, formerly sales engineer with the American Marietta Co., Chicago, has recently been appointed sales manager for the Floquil Products Co., New York, N. Y., specializing in marking equipment and colors.

Package Machinery Co. is busy turning out 20 razor-blade wrapping machines for 12 eastern manufacturers supplying government razor-blade requirements.

Acme Steel Co., manufacturer of metal reinforcements for containers, announces the appointment of Thomas J. Anderson and Frank W. Shymkus as Director of Purchases and Purchasing Agent, respectively.

Harris-Seybold-Potter Co., Cleveland, announces the election of A. T. Colwell as a director. Mr. Colwell is second vice-president and a member of the board of directors of Thompson Products, Inc., and Thompson Aircraft Products Co.

Owens-Illinois Glass Co. plants at Alton, Ill., and Bridgeton, N. J., have received the National Safety Council's Wartime awards for "Distinguished Service to Safety." The plants were credited with a remarkable reduction in lost-time accidents during the year 1942.

Eugene J. Robb, formerly with Eastman Kodak, is a new member of the Merchandising Division in the Toledo general offices of the Owens-Illinois Glass Co.

Raymond Loewy, designer, announces the expansion of his New York office staff as well as the establishment of branch offices at South Bend, Ind., and Chicago. Important additions to the New York staff include R. H. Askren, formerly with Montgomery-Ward, who will act as co-director of package design, and H. Spencer Barnhart, product designer, as executive assistant. In response to increased interest in postwar research and development, all departments of the Loewy organization have been enlarged.

Other additions to the New York staff are Louis Marie Eude, art director of Town and Country magazine, who will function as a design consultant, and Leon Hyzen and Peter Copeland, architects. Five other designers have been added to departments of the New York headquarters.

Edward D. Morris, formerly with John Borman & Son Co. in Detroit, has joined the New York staff of the Lithographers National Association. He fills the vacancy caused by the resignation of Stanley C. White to accept a lieutenantancy in the Navy.

Morgan D. Lalor, specialist in market analysis, has been appointed assistant general sales manager of the Reynolds Metals Co. He came with the company in 1940.

R. A. Irwin has been appointed director of sales of Somerville, Ltd., London, Ont. In his ten years with Somerville, Mr. Irwin has seen service in the plants and has been manager of the Toronto and Montreal sales offices; most recently he has been manager of the shell container department. In his new post he will have jurisdiction over package, creative display, auto panel and games sales.



R. A. Irwin

National Starch Products, Inc., will move its New York executive offices and research laboratories to 270 Madison Ave. about Nov. 15. New quarters comprise 24,000 sq. ft. of floor space.

The Concan Ordnance Co., a wholly owned subsidiary of the Continental Can Co., Inc., will take over operation of the Redstone Arsenal at Huntsville, Ala., if negotiations now under way are concluded. It is expected that Price R. Reid of the Continental organization will assume charge at the Redstone Arsenal as general manager.

Stanley J. Frame, previously with Swift & Co., has joined the New York staff of Continental Can Co., Inc., as market analyst.

Kenneth G. Houts, who has been connected with the home office Sales Department, has been appointed Washington-Oregon Representative of Menasha Products Co., Menasha, Wis. He succeeds Arthur Jones, who is now in service with the Merchant Marine, according to D. A. Snyder, manager of the company's Food Packaging Division, who made the announcement. Mr. Houts will make his headquarters in Seattle.

OBITUARY

Michael A. Flynn, a veteran of 43 years with International Printing Ink and manager of the Baltimore office since 1925, died Oct. 1 at his Baltimore home. He was 57.

Henry L. Brueggemann, director of purchases for Acme Steel Co., Chicago, died suddenly of a heart attack Sept. 15 at his home in Palos Park, Ill. He was 46.

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Stand at Attention, World!

Official U.S. Marine Corps Photo

NOT for the Legion of Merit medal that adorns the uniform, but for the American behind it.

Stand at attention, World . . . for each of these men, but ask not if he is "officer" or "legionnaire"—if he is rich or poor. Look not at his profile, the slant of jaw, the shade of skin, for his citation reads: "without regard for his personal safety."

Stand at attention, World, but look not into his eyes to mark their color. For those eyes have seen, through tears, a comrade lying on the battlefield . . . like an autumn leaf bathed in scarlet and twisted in the mud.

Stand at attention, World—but ask not if he is teamster or

teacher, surgeon or subway guard. What matter if he was called to duty from the wheatfields, or from the shoe department of a big town store?

What matter if his grandfather rests in a well-kept American grave or in an unmarked site outside a Nazi concentration camp? Ask not what religion prompts a prayer, in that brief moment of protective darkness between bursts of shellfire—a prayer for those at home—a prayer that he might see them once again.

Let us stand at attention, World, for the Legion of Merit—and for all heroes of Democracy! Let us redouble our efforts for Victory, that their prayers be answered. Let us live and work in harmony that their sacrifices bear fruit.

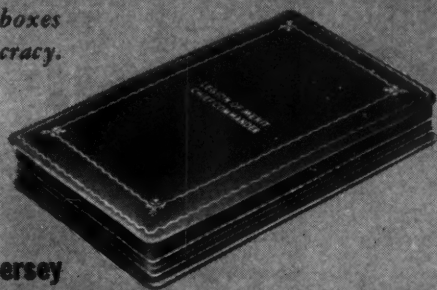
One of a series of editorials published in the interest of the War Effort. Back up our heroes! Buy more Bonds!

Arrow is proud to have been chosen to manufacture the boxes which hold the Legion of Merit medals for heroes of democracy.

Arrow

BOXES AND DISPLAYS

ARROW MANUFACTURING COMPANY, INC., 15th and Hudson Streets, Hoboken, New Jersey



For Your Information

Packaging Institute—Representatives in the packaging field will take time out to get a quick look and new perspective when the Institute meets November 4 and 5 at the Hotel New Yorker, New York City.

The meetings will be thrown open for anyone who cares to attend regardless of membership. The only sessions not open to non-members are the section gatherings of the three divisions of the organization (machinery, supplies and production men) scheduled for the Thursday luncheon hour. Details of the program follow:

THURSDAY—NOVEMBER 4

10:00 A. M.: Presiding officer: Joel Y. Lund, vice-president, Lambert Pharmacal Co. and president of Packaging Institute.

"What Is Today's Packaging Picture?" Charles L. Sheldon, purchasing agent, The Hood Rubber Co., Watertown, Mass., former chief of Containers Branch, WPB.

"The Techniques of Glass Packaging," H. A. Barnby, Director of Package Research, Owens-Illinois Glass Co., Toledo, Ohio. Mr. Barnby will give a preview of Packaging Institute's Glass Packaging Manual, accompanied by a 20-minute technicolor motion picture, following which opportunity will be given those attending to discuss their problems informally.

Luncheon meetings: Machinery Section, Suppliers' Section and Production Section will hold noonday business meetings to elect officers and directors for the coming year.

2:00 P. M.: Presiding officer, Charles A. Southwick, Jr., technical editor of MODERN PACKAGING and Research Director of Shellmar Products Co. Mount Vernon, Ohio.

"Glue in the New Geography of Packaging," F. C. Campins, Research Director, National Adhesives Division of the National Starch Co.

"Standards for Package Testing"—3-member Panel—C. A. Southwick, Jr.; F. S. Leinbach, Riegel Paper Co.; W. F. Graebner, Menasha Products Co. Emphasis will be on the evaluation of the functional qualities of packages as such rather than on an evaluation of package materials in sheet form.

6:15 P. M.: Reception.

7:00 P. M.: Annual Packaging Institute dinner. Presiding officer, Joel Y. Lund.

"First Hand Reports from the War Front," Charles Collingwood, ace correspondent for CBS, winner of the George Foster Peabody Award. Mr. Collingwood, recently back from the field of action, will give an inspiring picture of his experiences during the campaigns in Tunisia, Sicily and Italy. By request of the membership, it was decided that the evening dinner should be devoted to topics of general interest.

FRIDAY—NOVEMBER 5

10:00 A. M.: Presiding officer, Wallace D. Kimball, first vice-president, Standard-Knapp Corp., Portland, Conn., president, Machinery Section, Packaging Institute.

Machinery Roundtable for production men and machinery manufacturers. The four topics presented for discussion will be: (1) Alien Property Patents, (2) Limitation Orders, (3) Termination of Contracts, (4) Renegotiation.

The four members of the Panel will be:

Dexter North, Office of the Alien Property Custodian, Washington, D. C.

G. A. Mohlman, president, Package Machinery Co., Springfield, Mass.

John Hooper, vice-president, American Machinery & Foundry Co., Brooklyn, N. Y.

The fourth member will be a representative of the U. S. Armed

Forces from the Office of the Purchasing Division, Service of Supply.

Luncheon: Special session for pharmaceutical manufacturers open to members and non-members. Presiding officer, W. O. Brewer, Calco Chemical Division of the American Cyanamid Co., Bound Brook, N. J.

Friday afternoon: Presiding officer, Walton D. Lynch, vice-president, National Folding Box Co.

"Packaging Materials Today"—round-table discussion—6-member panel consisting of the following:

Fibreboard: N. F. Greenway, Robert Gair Co., Inc., New York.

Boxboard: J. G. Otto, Alton Boxboard Co., Alton, Ill.

Metal Containers: Sol Buschman, National Can Co., New York.

Collapsible Tubes: Frederic Remington, president, Peerless Tube Co., Bloomfield, N. J.

Protective Papers: F. S. Leinbach, Riegel Paper Co., New York City.

Transparent Covering: A. B. Martin, Shellmar Products Co., Mount Vernon, Ohio.

The Institute will publish reports of the proceedings from stenotyped transcript, and each registrant, whether member or non-member, will be given a copy without extra charge. Registration fee, \$10.00 for the full session; single day, \$5.00. Tickets for dinner and cocktail party, \$7.50.

How to specify corrugated boxes is the seventh booklet in the series which comprises the little packaging library of the Hinde & Dauch Paper Co. Emphasis is placed on the proper engineering of corrugated boxes for their particular tasks. Copies may be obtained by writing the company at Sandusky, Ohio.

Government plywood specifications. Included in a booklet published by the Resinous Products & Chemical Co., Philadelphia, Pa., will be found information about specifications for boxes, crates, packing boxes and adhesives. The booklet also contains summary of wet-dry cycle tests. Copies are available upon request written on company letterheads.

Salvage really pays. More than a million pounds of vitally important tin have been reclaimed through salvaging toothpaste and shaving cream tubes, which consumers have been turning in at retail stores, according to an announcement made by W. M. Rose, president of the Tin Salvage Institute. The need continues to be urgent. The metal has been coming in, Mr. Rose said, at a gratifying rate. It is being used in both direct and indirect war work for submarines, planes, radio equipment, tanks, bearings, etc. Commending druggists for their excellent work, the Tin Salvage Institute requested them to continue collecting used tubes and turning them over to wholesalers for shipment to the Newark Reclamation Plant.

The Commonwealth of Australia has issued technical Bulletin No. 1 in the form of a report of their tinsplate substitute container committee. The interesting feature of this booklet is the striking parallel between that country and America in short age problems and the search for substitute containers. Also interesting, technically, are their water-vapor permeability measurements.

Coated and Processed Paper Assn. is the new name of the organization which for many years has been known in the trade as the Glazed and Fancy Paper Assn. This action was taken at a special meeting called in October to amend the articles of association.

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**SPICK-AND-SPAN
...AND SPICY!**



From the spick-and-span kitchens of The Booth Fisheries Corporation comes a wide variety of spiced fish, to bring piquant pleasure to the tables of Mr. and Mrs. America.

Like countless other well-known food products, Booth Spiced Fish are packed in attractive glass containers and sealed with Crown Lug and Screw Caps.

Crown Closures, in a wide variety of styles and sizes, suitable for all types of glass-packed products, are now available. Manufacturers are invited to write for samples and prices.

CROWN CORK & SEAL COMPANY

World's Largest Makers of Closures for Glass Containers

BALTIMORE, MARYLAND

CROWN CLOSURES

CROWN'S WARTIME POLICY: To supply closures, containers and services for packaging foods, beverages, chemicals, etc., needed by civilians and the armed forces. To build an ever-increasing volume of vitally needed weapons of war for our fighting men.

Re-use campaign

(Continued from page 106) to pick up their old containers and ship back to the home company. Even the inside containers are returned after being slit down the corners so they can be knocked down and then repaired with stays in the home factory so that they may be refilled.

A number of similar cases have been explained in the various meetings together with instructions on how to open boxes without damage by the use of a simple paddle. Officials caution again and again that they are not trying to encourage complicated operations, long distance hauls of used containers or useless salvage of damaged boxes. If they are too far gone, the proper place for used containers is in the waste paper salvage collection and Containers Division officials are the first to admit it. However, they are firmly convinced that thousands of containers can be used a second or third time and only ask that common sense be used in attempted re-use.

Closely tied in with the Re-Use Campaign is the recent Order L-317 which restricts use of fibre containers. This order

eliminates manufacture of containers for carry-outs, counter boxes, display-shippers, laundry boxes and retail gift boxes. It further prohibits use for certain products and cuts others to a certain percentage of former use.

There is a divided opinion in the Containers Division as to its value. Some say that it does not go far enough and will save little fibre. Others admit that it is not particularly severe, but assert that more restrictions will be added if the container situation gets worse. The latter school feels that it would be too drastic arbitrarily to eliminate large classes of users until more effort has been made to study and adjust each individual situation. They point out that there is *almost* enough container board to meet all needs if it could only be put in the right place at the right time. They do not want to put some one out of business for lack of containers if there is any possibility that sufficient containers may be found a short time later.

Those who think the order doesn't go far enough insist that it will save less than 5 per cent, while the shortage of container board is estimated all the way from 5 to 20 per cent, depending upon who does the estimating. The point to such things as containers for bridles and suitcases on the prohibited list as of minor consequence in saving fibre which is of course the vital substance. They say that few containers are used for such items and furthermore it would be easy for the manufacturer to use wrapping paper instead, and wrapping paper takes the same pulp that goes into containers. Defenders of the order insist that wrapping paper machines can't make liner board anyhow and that it doesn't make sense to shut down wrapping paper machines in favor of liner board machines.

Another argument waxes over the quota list which permits only a certain percentage of containers to various products. The Re-Use Campaigners assert that this provision will force producers of such things as cosmetics, candles, brushes, toys, etc., to go out and search for used containers in order that they may ship more goods. Critics of the order assert that is just what they don't want to happen because used containers put into service for these and so-called less essential items should go back into the beaters for new containers to be used in packaging more essential goods.

Behind all of this difference of opinion is the big question of allocation of containers according to essentiality of product. It's easy to talk about, but difficult to pin down. Newspaper stories have been printed saying it is only a matter of weeks before it will be put into practice, but Mr. Boeschstein has not yet spoken on the subject. Whoever accepts the responsibility, if it is ever done, will lie in a perpetual bed of thorns. Just one example illustrates the point. Tobacco is that example. It seems logical to believe that tobacco could be put on a less essential list insofar as containers are concerned. Think how the ladies would scream if it were placed on an essential list and cosmetics placed on an unessential list. On the other hand, tobacco is considered an essential for overseas soldiers and sailors. If it is essential for them, why isn't it essential to keep up the morale at home? If you can answer that one to everybody's satisfaction, you can have the job of allocator for all types of containers.

The fact remains—a stark and uninviting fact—paper-board resources must be conserved by every conceivable means, which includes what amounts to allocation by industries and also re-use of existing material. WPB believes industry will respond to the voluntary participation appeal and speed the war effort.

A LETTER TO THE EDITOR

SIR: In your article on "Patterns for Package Planning" in September MODERN PACKAGING, you state: "It would seem as though testing of materials, if practiced at all, is handled in a rather haphazard manner, chief reliance being placed on someone's previous experience . . ."

We have read with interest your article but fail to agree that all testing is haphazard. We, for one company, will not take for granted previous experience or the manufacturer's claims for a certain material, but will run extensive tests on all new materials being used, or contemplated to be used, as substitutes for our present packages.

We perform storage tests at different temperatures, as well as at different percentages of relative humidity. Periodically, we not only examine the product for appearance, taste, odor, etc., but, if it is a product which may lose potency with unfavorable storage, we have chemical tests performed on it by the laboratories. We also examine the packaging material to see how it holds up under adverse conditions.

We grant you that in these times when we have to find substitute packaging materials in very short periods of time, one is prone to take a chance on someone's previous experience. Our policy is different. We will temporarily discontinue, or put on back-order, an item for which we do not have an absolutely suitable substitute package, pending the results of storage experiments. Then, we quite often only put up a limited supply to be distributed in a certain territory for further information on how the customer may take to the new package.

It might be wise to collect information from companies, who, like ourselves, run extensive tests on new packaging materials before adopting them for use, on how these tests are carried out, and then write an article as a sequel to the one cited in this letter, giving this information as general information to those companies who do not run such tests. I am sure you could get some very valuable information on this subject.

Very truly yours,

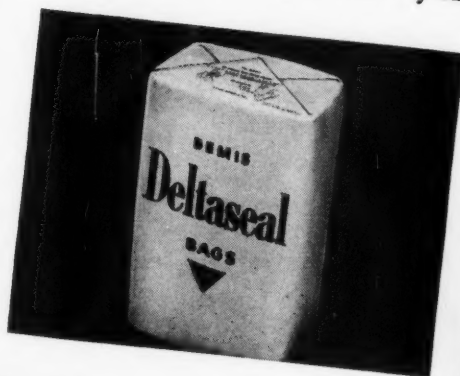
E. R. Squibb & Sons
W. N. Dunn,
Container Control & Complaint Dept.

Judge and Jury on package design

The success or failure of a package design is up to the American homemaker. And, she wants her packages handy as well as attractive.

As evidence, a recent survey by a nationally known research organization reveals that 85.4% of the women want packages with pouring spouts.

This is why retailers report that neat, attractive Deltaseal Bags with their handy pouring spout feature make many steady customers for products they carry.



BEMIS BRO. BAG CO.

Headquarters for the

DELTASEAL System of PACKAGING

Minneapolis, Minnesota

OFFICES: Baltimore • Boston • Brooklyn • Buffalo
Charlotte • Chicago • Denver • Detroit • E. Pepperell
Houston • Indianapolis • Kansas City • Los Angeles



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NOVEMBER • 1943

121

TAPPI Conference

(Continued from page 102) Dr. J. K. Dixon, of the American Cyanamid Co., on "Application of a Thermal Conductivity Method to the Determination of Water Vapor Permeability of Packaging Materials." The paper, read by Mr. Boor, may be summed up as follows:

An investigation has been made of a non-gravimetric method of evaluating water-vapor permeability of typical packaging materials. In principle, it consists of a means of clamping a test substance between two flanged members, providing a high water-vapor pressure on one side and low on the other, and measuring the increase of moisture content on the dry side due to permeation of moisture through the membrane by means of a sensitive electrical cell. This cell operates on the principle of change in thermal conductivity of air-water-vapor mixtures with changes in water-vapor concentration. The whole assembly is an adaptation of the Permeameter made by the Cambridge Instrument Co., originally designed for measuring permeability of balloon fabrics to hydrogen.

Water-vapor transmission of a variety of materials was determined on the instrument by two methods and compared with that obtained on the same substances by two gravimetric methods, one of which simulates the General Foods Method.

The two gravimetric methods of permeability gave a general correlation with the instrument methods. Charts showing the relative permeability of a variety of typical materials by the different procedures are given.

Further experimentation using this apparatus was outlined and other applications of the sensitive cell to problems of water-vapor permeability suggested.

In the general discussion following the Boor-Dixon paper it was suggested that there might be difficulty in calibrating, in that the dry air which passes across the top of the membrane in the Boor-Dixon method to pick up the moisture has to be passed through a thermal conductivity cell. It is necessary to have enough moisture to get within the range of sensitive readings. The slower the air is run, the more moisture, the higher the moisture concentration, and the smaller the difference in moisture grading across the membrane. Therefore, it was suggested that the apparent permeability would differ with the rate of air passage.

That is quite true, Mr. Boor replied, but for every low-permeability material the actual reading obtained is extremely small, so that if air is run, for instance, at 100 cc. a minute and a reading obtained of one division, it will correspond to approximately .16 permeability; if the flow is cut down to 50 cc., there might be two divisions of reading, which would still be a very small change in the grading between the two phases. Mr. Boor conceded that in some of the membranes which had relatively high permeabilities, the permeameter tended to give low results.

Dr. George H. Sears, of the Institute of Paper Chemistry, then presented his paper on "Comparison of Methods for the Determination of Water-Vapor Permeability," which was a comparison of the Institute of Paper Chemistry method with the Southwick Method.

Dr. C. G. Weber, of the National Bureau of Standards, read his paper on "Report of Special Water-Vapor Permeability Testing Projects." This was based on a study of the Southwick Method carried out by Dr. Weber last summer at the request of the Quartermaster Corps.

The special problem of a standard creasing method to be used in conjunction with any water-vapor permeability test was discussed by Dr. Sears in his second paper, "Method of Creasing Paper for Testing Water-Vapor Permeability," which described a method worked out at the Institute of Paper Chemistry.

Recommendation for standard

The final talk was the recommendation for a tentative emergency standard for water vapor permeability measurement, presented by Maj. James d'A. Clark, of the Chicago Quartermaster Depot. Briefly, the suggested standard differentiates sharply between water and water vapor, in that it specifies the upper limit of humidity as 88 to 92 per cent, which eliminates the danger of any free water being in contact with the sample. Temperature is to be 100 deg. F. The low humidity side of this test was specified as from 4 to 20 per cent, since per cent of humidity is not so important in this range, and it was thought that the range would cover much of the testing equipment now in operation. Maj. Clark also recommended that in the future water-vapor permeability tests be reported in grams per square meter and that the test be called "water-vapor permeability" rather than "moisture transmission," "moisture permeability," etc., which in the past have been used indiscriminately.

These recommendations of the committee were subjected to some discussion, but appeared to have found acceptance with the knowledge that more work is to be done to make this testing method more precise.

Progress in Roll-Type Labels

(Continued from page 85) seems to be a prime requisite in this field, which leads to the conclusion that large volume printing of a standard design would work hand in hand with an individual label to designate the variety and price. With or without standardized over-all printing, the flexible inexpensive label seems to be an ideal method of identification.

An accompanying illustration shows an experimental attachment developed for applying top labels to bread after wrapping.

It is too early to say too much about the possibilities of roll-type thermoplastic labels in other fields, but indications are that adoptions will only be limited by the composite imagination of a given industry, the label printer and the machine manufacturer. Fortunately, the mechanical problems have already been solved to a large degree and it seems to be only a question of time before the manufacturers of packaged merchandise will find wide use for this simplified and efficient system.

Still in its infancy, the process of applying roll-type thermoplastic labels seems on the whole to be a fresh approach to the problem of handling liquid adhesives in combination with a satisfactory mechanical application, which has long troubled the packaging industry.

Credits: Labeling machinery, Oliver Machinery Co., Grand Rapids, Mich. Labels, Menasha Products Co., Menasha, Wis. Wrapping machines illustrated to show attachments: Hayssen Mfg. Co., Sheboygan, Wis.; National Bread Wrapping Machine Co., Springfield, Mass., and American Machine and Foundry Co., Brooklyn, N. Y.

Mr. Slowey:
"Sure you can."

Joan:
"Really? You're joking."

Mr. Slowey:
"No I'm not, Joan."

Joan:
"Tell me how."

"I DIDN'T KNOW
YOU COULD MAKE
TANKS FROM OLD
BOTTLES!"

Mr. Slowey: "Surely, Joan—you look around and find all the discontinued lots of bottles and bottle caps you no longer have use for. Let me know what kind and how many you have, and I will pay you cash for them. Take this money and buy more War Bonds and you'll see just how fast Uncle Sam can turn your savings into tanks and other weapons. Isn't that making tanks from old bottles?"

We will buy any odd, discontinued or obsolete bottles or bottle caps, either metal or bakelite, plain or lithographed, regardless of size or quantities. In fact any kind of containers including paper or metal cans, compacts and lipsticks.

WRITE, WIRE OR PHONE US FOR A QUOTATION

GLASS CONTAINER & CAP OUTLET CO.

14 EAST 17TH STREET

NEW YORK, N. Y.

Questions and Answers

(Continued from page 104) following three weeks' gains as an index. The packages with the waxed plug when compared with the unwaxed control package will show the quantity of moisture vapor which enters through the closure. The same waxing technique can be applied to seams, etc., to determine quantitatively the amount of moisture entering the container at various points. An atmosphere of 100 deg. F. and 90 per cent relative humidity can be readily controlled with proper thermostats and slow air circulation. Special precaution should be made so that water cannot drip on any of the sample packages as this will adversely affect the results.

The above specification detail has been used commercially for many products and there is no question about its ability to carry your product; as a matter of fact, tests have indicated that this construction is at least equal to the conventional metal can without lined ends or soldered side seams.

In both types, some benefit would be obtained by the addition of protection of a moistureproof lacquer on the labels. A good specification for such a moistureproof lacquer label would be $1\frac{1}{2}$ lbs. plus or minus $\frac{1}{8}$ lb. per 1000 sq. ft. of a moistureproof nitrocellulose lacquer on a well-finished, coated one side label stock. The moistureproof lacquer should be evenly and continuously applied and the label should be overlapped with the overlap well adhered. Such a moistureproof label should be applied at the time the fibre body is made so that it is seamed down under the top and bottom metal ends. The effectiveness of such a lacquer label is less noticeable in highly moistureproof body constructions described above, but this type of finish is very durable and it does contribute a plus value toward the protection of the contents.

Hands Off

(Continued from page 75) valve guides are given a final dip in rust-preventive solution and drained. They are then wrapped in a special waxed paper and placed for shipment in eggcrate type corrugated containers, each part with its waxed-paper wrapping separated from the others in its own partitioned cell. Sheets of corrugated board are used to separate the layers.

The plant makes use of three sizes of tubular, spiral-wound paper cartons for interior unit packaging within the master shipping containers. These cylindrical cartons are used for such parts as crankshaft plugs, spools, pins and rollers. In such cases, carney cloth and waxed paper are used to wrap each individual part and the wrapped parts are then wadded into the capped tubes in such quantities as can be conveniently accommodated.

An exception to the above method is made in the case of keepers, which are stacked and wrapped in waxed paper much as a bank teller wraps coins. The tightly wrapped columns are then laid in layers within the master shipping container. The layers are separated by panels of corrugated board. Made of stainless steel, such parts do not require the degree of moisture protection necessary to the plant's other products and it is permissible also for the packer to touch them with his hands.

By the development of standard, efficiency processes of packaging, this plant's shipping department is able to keep up with the steady flow of production with a staff of only 12 persons, divided between two shifts.

The unusual packaging problem is simplified to some extent by the fact that no export shipment is involved. All engine parts go directly to engine assemblers in this country for immediate use. Nevertheless, it has been found advisable to use the double-wall, 600-lb. corrugated shipping containers in all cases, to obviate any shipping damage which might disturb the protective inner wrappings.

Half-inch metal banding in two strips crosswise and two lengthwise is used to reinforce the sealed containers, since a high concentration of weight, up to 160 lbs. per carton, is encountered.

Safe delivery of corrosion-free precision parts on schedule is now the rule rather than the exception with this manufacturer.

Tools for Marking

(Continued from page 73) of used containers and the result was very satisfactory.

Another product of this company is colored inks obtainable in the colors of the special services such as Quarter-master Green, Medical Maroon, Engineer Red, etc. These are quick-drying colors which are applied by roller either in the triangular corner method of marking or the color bands as required for certain branches of the service.

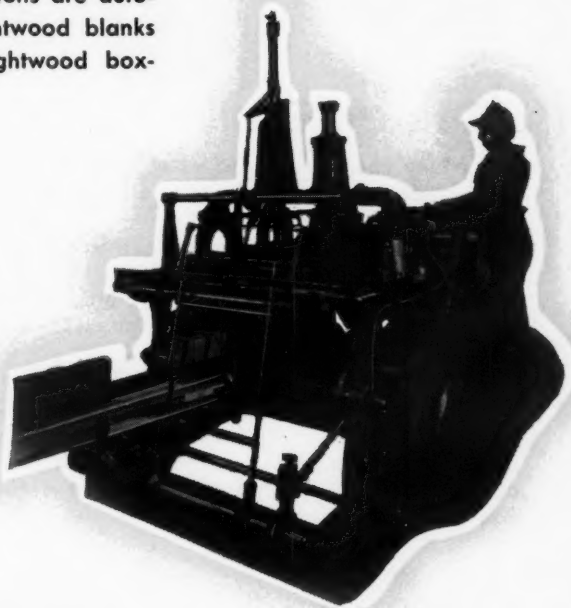
Most marking inks and materials, whether applied by brush-and-stencil, crayon or marking pen, are of a reasonable permanent character. But in order to have double assurance, one of the wax companies has developed a special protective wax designed to be used as a protective coating, applied to the outer surface after the marking is on. This affords added protection from the ravages of sun, moisture and handling.

All this is by no means a complete review of the many devices, materials and equipment available for the marking of shipments. A more detailed picture is unnecessary in view of the fact that many of those executives who are concerning themselves with shipping problems today started their business career in the shipping department. They are getting back there now because of unusual condition. They are learning that all productive efforts are of no avail whatever unless shipments arrive in usable conditions. The lessons being learned today, and the equipment being developed today will have a carry-over value for the post-war period. The knowledge thus gained will prove an invaluable good will builder for American goods all over the world, particularly in the heavy-goods field which is expected to have a prominent place in postwar foreign commerce.

Credit: Handbook for shipping department, Marsh Stencil Machine Co., Belleville, Ill. "Shippers' Handy Helper," The Diagraph-Bradley Stencil Machine Corp., St. Louis, Mo. Water-proof label paper, McLaurin-Jones Co., Brookfield, Mass. Adhesive for same, Williamson Adhesives, Inc., Chicago, Ill. Shipping labels and booklet, Ever Ready Label Corp., New York, N. Y. Protector plate for packing list, Dennison Mfg. Co., Framingham, Mass. Stencil machines, stencils and inks, Diagraph-Bradley Stencil Machine Corp., St. Louis, Mo.; Ideal Stencil Machine Co., Belleville, Ill.; Marsh Stencil Machine Co., Belleville, Ill. Cellulose stencil, Floquil Products, Inc., New York, N. Y. Paint stick marker, The Markal Co., Chicago, Ill. Marking ink pen, Floquil Products, Inc., New York, N. Y. Marking crayons, Milton Bradley Co., Springfield, Mass. Salvage kraft outfit and service color inks, Floquil Products, Inc., New York, N. Y. Protective wax, S. C. Johnson & Son, Inc., Racine, Wis.

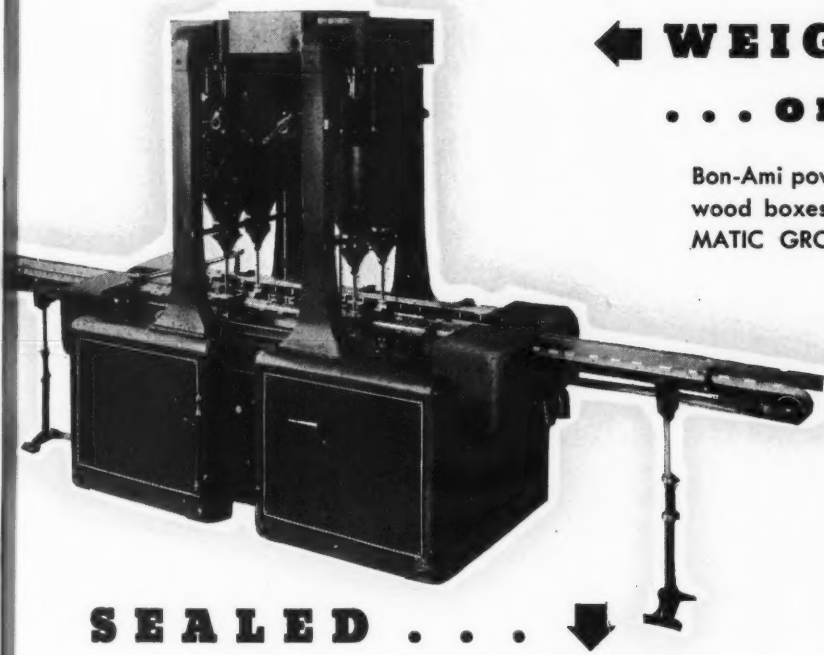
MADE...on this machine ↓

The new Bon-Ami paper cartons are automatically formed from Brightwood blanks by this U.S. Automatic Brightwood box-making machine.



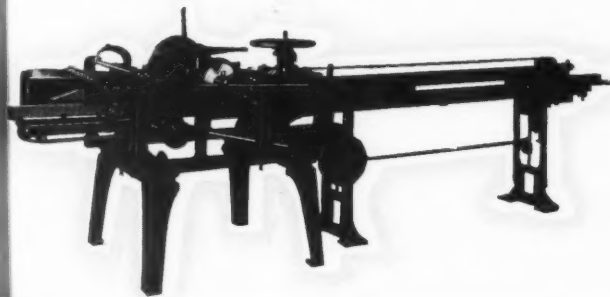
← WEIGHED & FILLED ...on this machine

Bon-Ami powder is weighed and filled into the Brightwood boxes on this U. S. MODEL JN BOND AUTOMATIC GROSS WEIGHT PACKING MACHINE.



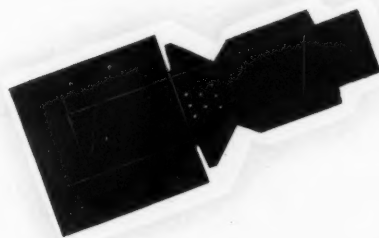
SEALED . . . ↓

The U.S. Automatic carton sealer finishes the automatic packing and weighing of Bon-Ami powder.



BRIGHTWOOD BLANK ↓

which makes Bon-Ami package. These blanks save material by interlocking in the cutting and creasing operations. They save gluing operations by setting up the bottoms and sides at the same time on the Brightwood, thus getting a solid leak proof bottom.



This automatic high-speed production line illustrates what U.S. Automatic equipment can do in a packaging plant. Send for further information.

UNITED STATES AUTOMATIC BOX MACHINERY CO., INC.

owning and operating

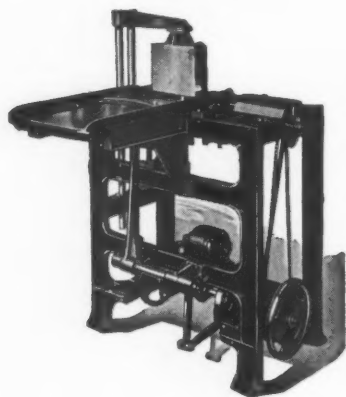
National Packaging Machinery Co. — Cartoning Machinery Corp.

18 Arboretum Road, (Roslindale) Boston, Mass. Branch Offices: New York, Cleveland, Chicago

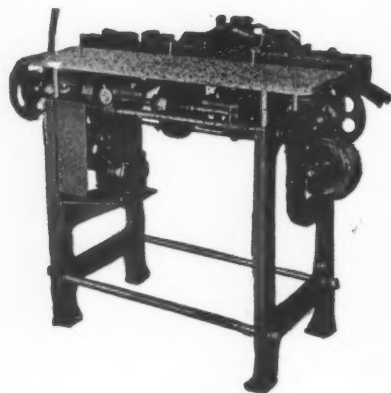
IT'S SMART TO MAKE YOUR POST-WAR PLANS NOW

Many changes in production requirements have taken place since the war began. Where formerly it was possible to get along with slow packaging methods, it has now become almost out of reason to endeavor to continue in this vein. Greater production is the key to winning the war as soon as possible and greater production will be the key to efficient and profitable operation when peace is again restored.

If you are unable to obtain a high priority now, investigate these machines for installation as soon as possible after the war. Send us a sample of each size carton you desire to handle and we will recommend machines to meet your specific requirements.



This PETERS JUNIOR CARTON FORMING AND LINING MACHINE sets up 30-40 cartons per minute, requiring one operator. After the cartons are set up, they drop onto the conveyor belt where they are carried to be filled. Can be made adjustable to handle several carton sizes.



This PETERS JUNIOR CARTON FOLDING AND CLOSING MACHINE closes 30-40 cartons per minute, requiring no operator. The cartons enter this machine as open, filled cartons on conveyor belt and leave machine completely closed, ready to be packed for shipment or wrapped. Can also be made adjustable to handle several carton sizes.

If you require repair parts, do not hesitate to order them. We will make prompt shipment without interfering with the large amount of war work we are now doing.

PETERS MACHINERY COMPANY

GENERAL OFFICE AND FACTORY

4700 RAVENSWOOD AVENUE, CHICAGO, ILL.

Electronics—Quality Control

(Continued from page 94) mark impulse to provide reversing control.

The maximum speed change of the feed rolls as caused by the differential should be no greater than about 1 per cent of the web speed; otherwise, hunting of the system may be encountered.

With a smoothly operating mechanical system, the cut can be made to occur within $1/32$ in. of the desired position. Here again, the color contrast of the register mark determines the maximum speed of operation of the machine from the regulating standpoint. On machines with little back lash or sluggishness, operating speeds as high as 3,000 fpm may be obtained providing such high speeds are mechanically possible.

All of the regulators described herein can be arranged to operate from a dark register mark on light paper or a light register mark on dark paper. All of the scanners are essentially the same, each containing a phototube, light source and amplifier tube and may be arranged for either transmitted or reflected light depending upon the wrapping material.

Application considerations

In applying photoelectric register regulators to wrapping machines, careful consideration should be given to such factors as the size, position and color of the register marks, whether transmitted or reflected light is required, normal operating speeds of the machine and prevailing line voltage variations.

As mentioned earlier, the size of the register mark is generally about $1/8$ in. wide by $1/2$ in. long. It is printed perpendicular and adjacent to the paper edge, preferably with no other printing between. However, if printed elsewhere on the sheet, no other printing should appear within a distance of about 10 per cent of the sheet length on either side of the spot.

The color of the register mark is closely related to the optical system used. In reflected light applications, a black, dark blue or dark green spot has been found most desirable on materials of light color. On dark blue, black, grey or green, a yellow, white or red spot is quite satisfactory. In transmitted light applications, the density of the mark is more important than the color. For instance, a white spot on cellophane is quite satisfactory. In any case, the minimum difference in transmitted light between the register mark and the paper should be not less than 5 per cent.

Transmitted light is normally used on machines using cellophane or glassine papers and reflected light is used on opaque papers. Where both types of wrapping materials may be used on the same machine, a reflected light scanner is normally applied and suitable reflecting means placed beneath the wrapping material to give reflected light operation with cellophane or other translucent material.

Inasmuch as register regulators normally operate from a sudden change in phototube illumination, gradual changes in supply line voltage up to about ± 10 per cent can be tolerated. However, if the line voltage changes quickly, incorrect operation may occur. The maximum permissible instantaneous line voltage change depends on color of the register mark.

Of necessity, the foregoing is a rather brief glimpse of the field of cutter registration, but it will serve to indicate the trend in quality control of a packaged product. Where there is a packaging machine, there is undoubtedly a register problem; and where such a problem occurs, electronics can be put to work to improve the product, increase production, boost the machine utilization factor and release valuable man-hours which would otherwise be required.

"PACK IT RIGHT to Reach the Fight"



... in Apaco **CORRUGATED CONTAINERS**

The Armed Services are as exacting about the container as they are about its contents . . . that's why they ask every shipper to "Pack It Right to Reach the Fight."

Never has Apaco taken greater pride in its products. Apaco corrugated shipping cases, Belsinger textile cases, and Apaco folding cartons—all are proving themselves invulnerable convoys for precious supplies—getting them to every front dry . . . intact . . . and ready for action!

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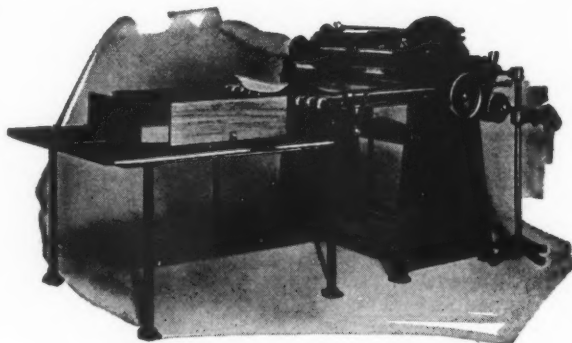
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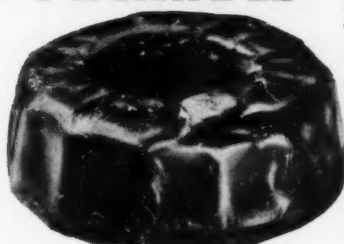
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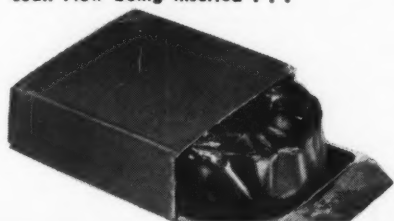
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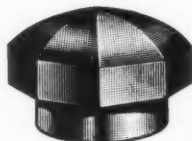
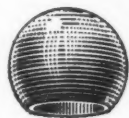
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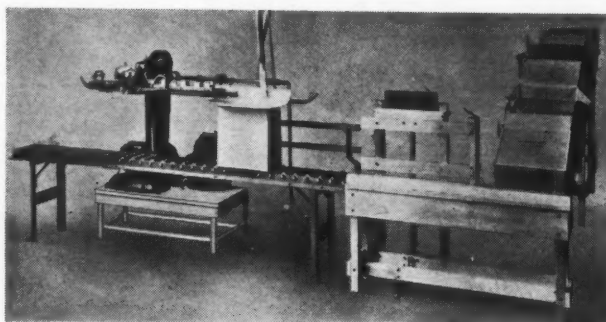
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Eliminates Bottlenecks in War Plants

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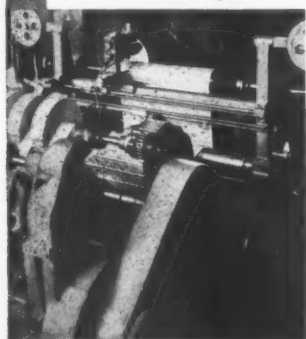
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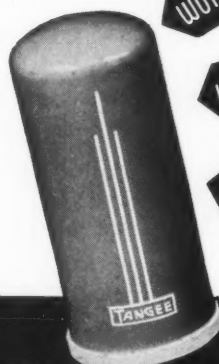
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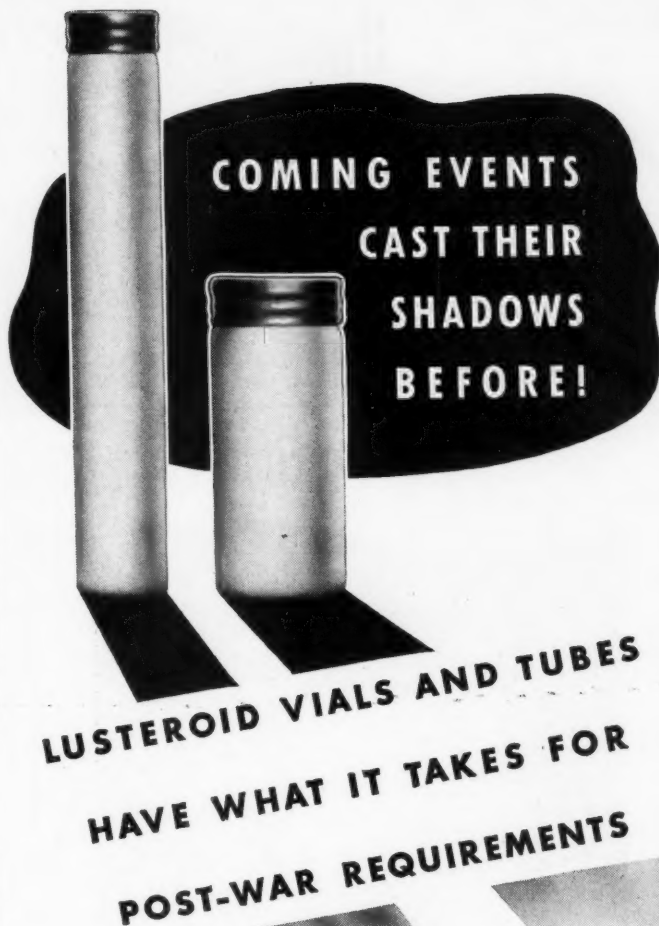
Both of them are fighting the Axis and winning the war. When the fight is won the bombs will have served their purpose but printers' ink will loom large in the post-war era.

We are going to have new and better aniline and rotogravure presses for post-war industrial printing.

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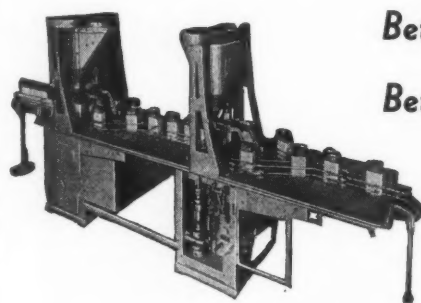
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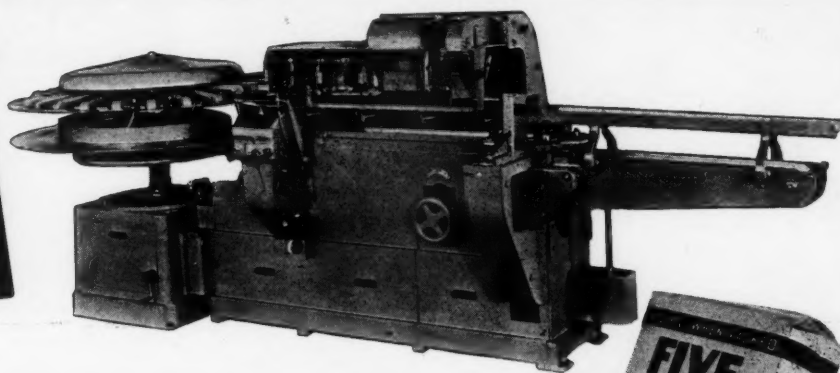
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We are looking for a man who understands industrial packaging. To the one who qualifies, we offer a permanent position with a company in the chemical industry. While his major duties will be concerned with packaging problems and the coordination of this work in sales and operating departments, other work concerned with production of printed material may be given to him from time to time. If you are interested and can qualify, address Box 194, Modern Packaging.

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FOR SALE: Automatic cellophane wrapping machine, in perfect condition. Made by Package Machinery Company, Springfield, Mass. Speed 80 to 100 per minute. Will wrap packages within these limits: 1" to 3⅛" long; 1½" to 4⅜" wide; ⅜" to 1¼" thick. Floor space 2½ feet by 3½ feet. May be seen in New York City. Reply Box 197, Modern Packaging.

INDEX TO ADVERTISEMENTS

Aluminum Co. of America	9	Ivers-Lee Company	48
Aluminum Seal Co.	41	Johnson, S. C., & Son, Inc.	128
American Can Co. Inside Front Cover		Keller-Dorian Corp.	46
American Cyanamid Co.	109	Kimble Glass Co.	31
American Photocopy Equipment Co.	133	Krause, Richard M., Inc.	20
Amsco Packaging Machinery Inc.	130	Levey, Frederick H., Co., Inc.	11
Anchor Hocking Glass Corp.	35	Lowe Paper Co.	18
Armstrong Cork Co.	23	Lusteroid Container Co. Inc.	131
Arrow Manufacturing Co.	117	McLaurin-Jones Co.	8
Atlanta Paper Co.	127	Manhattan Paste & Glue Co.	42
Beck, Charles, Machine Co.	128	Mason Box Co.	29
Bemis Bro. Bag Co.	121	Menasha Products Co.	30
Bingham Bros. Co.	128	Mergott, The J. E., Co.	129
Brown-Bridge Mills, Inc.	129	Meyercord Co., The.	36
Burt, F. N., Co., Inc.	89	Monsanto Chemical Co.	136
Cameo Die & Label Co.	40	Mundet Cork Corp.	103
Cameron Machine Co.	130	Nashua Gummed & Coated Paper Co.	50
Carr-Lowrey Glass Co.	105	National Starch Products, National Adhesives Div.	113
Celanese Celluloid Corp.	25	New Jersey Machine Corp.	28
Celluplastic Corp.	44	Old Dominion Box Co.	22
Classified	134	Owens-Illinois Glass Co.	99
Coloroid Corp.	132	Oxford Paper Co.	10
Consolidated Fruit Jar Co.	129	Package Machinery Co.	90
Consolidated Packaging Machinery Corp.	133	Palmer, Frank D., Inc.	45
Continental Can Co.	19	Peters Machinery Co.	126
Creative Printmakers Group	130	Phoenix Metal Cap Co.	3
Crown Can Co.	107	Pneumatic Scale Corp., Ltd.	95
Crown Cork & Seal Co.	119	Redington, F. B., Co.	5
Dobeckmun Co., The	47	Reynolds Metals Co., Inc.	26-27
Dow Chemical Co.	49	Rhineland Paper Co.	43
du Pont de Nemours, E. I., & Co., Inc., Cellophane Division	39	Riegel Paper Corp.	111
du Pont de Nemours, E. I., & Co., Inc., Cel-O-Seal Division	33	Ritchie, W. C., & Co.	37
Durez Plastics & Chemicals Inc. Inside Back Cover		Sav-way Industries	6-7
Eagle Printing Ink Co.	131	Shellmar Products Co. Back Cover	
Eastman Kodak Co., Chemical Sales Div.	101	Stokes & Smith Co.	132
Economic Machinery Co.	32	Sylvania Industrial Corp.	13
Gardner-Richardson Co.	16-17	Union Paste Co.	134
Glass Container & Cap Outlet Co.	123	U. S. Automatic Box Machinery Co. Inc.	125
Goodyear Tire & Rubber Co. Inc.	21	U. S. Rubber Co.	12
Great American Plastics Co.	14	Western Paper Goods Co.	34
Hazel-Atlas Glass Co.	15		
Hazen Paper Co.	38		
Heekin Can Co.	115		
Hudson-Sharp Machine Co.	131		

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BRESKIN PUBLISHING CORPORATION

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NOVEMBER • 1943 135



History's Greatest Packaging Job—

AND HOW PLASTICS ARE HELPING FILL IT

Plastics have a brilliant prewar record for helping solve puzzling packaging problems. But those were largely problems in how to dress the products of American industry to make the most of every bit of sales appeal they possessed—and thereby move them over sales counters faster than they had ever moved before.

Today the big job is to move the products of American industry to American fighting men over more than 56,000 miles of supply lines—and to move them faster and safer than any Army's weapons and supplies have ever moved before. You might think that plastics, the glamour boys of packaging materials, would be out for the duration.

But plastics have much more than good looks to recommend them. They combine strength and toughness with extremely light weight. Many are highly resistant to moisture. Many are uniquely resistant to chemicals. Nearly all work well with other materials—as adhesives, as protective coatings, as basic ingredients.

The result: plastics today are making many a vital contribution to history's greatest packaging job. Their war record easily rivals the brilliance of their prewar achievements.

* * * *

For information on how plastics are helping solve wartime packaging problems—and for expert advice on how they may help solve your *postwar* problems—call in a Monsanto consultant. You will find him well equipped to give unbiased answers to a wide range of questions, for the broad and versatile family of Monsanto plastics is one of the largest, most varied groups of plastics offered by any one manufacturer. MONSANTO CHEMICAL COMPANY, Plastics Division, Springfield, Massachusetts.

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(Trade names designate Monsanto's exclusive formulation of these basic plastic materials)

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Sheets • Rods • Tubes • Molding Compounds • Castings
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MONSANTO PLASTICS

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MOLDED TO HOLD A MILITARY SECRET!



No...we can't show the Pioneer airplane sextant that this molding houses. But you can see for yourself what a first-class job the Rathbun Molding Corporation has done.

Not only has this container more than the usual number of ribs and bosses...*it measures 10x10x10 inches.* Contrast this with the peace-time packages of recent years and you'll get some idea of the *post-war* future ahead for Durez plastics.

A primary specification for Pioneer's sextant housing was, obviously, high impact strength. That called for Durez 1905! For in addition to impact strength, it offers extreme light weight, and its integral finish is impervious to atmospheric changes and other conditions—such as moisture

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But utility plus is only one of the reasons why Durez plastics will be a *must* in your post-war packaging plans. Their lustrous, smooth finish—their wide range of colors—pack the eye-appeal that builds sales over the counter!

If you're out for prize-winning packages in the future...keep posted on Durez developments!

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411 Walck Road

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You read about it in the papers hours or days later. You get a thrill out of the veteran sureness of American lads from Main Street.

Yet behind the action lie weeks of preparation, months of production—and long, thorough package planning. Each expendable and replacement must be packed ready-to-use, ready-to-fire.

Shellmar packaging engineers have designed many of the key packages used in this war. Working in all materials—CELLOPHANE, PLIOFILM, SARAN, FOILS, PAPERS, LACQUER COATINGS—they are ready to help you pack your contributions to global war.



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